AMSTRAD COMPUTER USER

THE OFFICIAL AMSTRAD CPC MAGAZINE

November 1990
£1.45



POLE POSITION

RACE FOR THE CHEQUERED FLAG WITH ACCOLADE'S EPIC GRAND PRIX CIRCUIT EXTRAVANGANZA

DREAM DRIVING

UNDER 17? NO PROBLEM – A SENSATIONAL DAY OF EARLYDRIVE DRIVING LESSONS AT BRANDS HATCH IS UP FOR GRABS IN OUR FAB COMPETITION.

CARTOON MAYHEM

GET TO GRIPS WITH TURRICAN IN OUR FANTASTIC NEW GAME LEVEL WALK-THROUGH

COPY CATS

HOW TO MAKE THE MOST OF YOUR 24 PIN PRINTER WITH THE LATEST UTILITY FROM SEVEN STARS.

RED HOT BUMPER GAMEPLAN
13 GREAT GAMES INSIDE

11
9 770952 304013


THE ARCADE EXPLODES!
ATARI ST
AMIGA
IBM P.C .AND
COMPATIBLES
AMSTRAD CPC
SPECTRUM
COMMODORE 64
SEGA
FIRE & FORGET II ™
THE DEATH CONVOY
As the pilot of an all powerful combat vehicle, you are engaged in the hot pursuit of terrorists. Go into combat and be confronted by enemies as different in their appearance as in their combat techniques.
The ability to take to the air will be your strength, use this to outmanoeuvre the enemy.
Pick up weapons, ammunitions and fuel. You'll have to work your way through the entire convoy and destroy the leading vehicle, before the ULTIMATE EXPLOSION.
NUCLEAR threat...Stop. DESTROYER CONVOY detected..Stop. Wipe out the TERRORISTS..Stop. Scientists in DANGER...Stop. IMMEDIATE ACTION!..End of transmission.


QUICK REFLEXES, SPEED, INGENUITY AND NERVES OF STEEL ARE REQUIRED TO OBLITERATE THE OPPRESSOR.
SUPER FAST 3D ACTION.
15 INGENIOUS MUSICAL SCORES.
50 DIFFERENT TYPES OF ENEMIES.
5 SQUAD LEADERS TO DESTROY.
BONUS LEVELS
A MULTITUDE OF ARMS AND AMMO
LAND AND AIR COMBAT.
A FABULOUS ADAPTATION OF THE ARCADE GAME
FIRE & FORGET II
TITUS™ ARCADE
Copyright 1990, Titus Software Corporation. All rights reserved. Fire & Forget II, Titus and the Titus logo are registered trademarks of Titus Software Corporation. All other trademarks acknowledged. Product description and screen shots represent Amiga version, others may vary. Titus reserves the right to make modifications to the product at any time and without notice. Made in France
4TH STANNETS. LAINDON NORTH TRADE CENTRE.
BASILDON ESSEX. SS156DJ. PHONE: (0268) 541126

BrunWord

BrunWord 6128 £30

BrunWord 6128 is a complete word processing package with word processor, spelling checker and card filing programme. BrunWord 6128 out performs all other word processors for the CPC6128. It has its own high speed screen routine, giving it a very fast screen response and the editor features are logically arranged to be easy to learn. The spelling checker, with its dictionary, load into memory at the same time as the word processor, making access very convenient and exceptionally fast. It is supplied with an introductory tutor file.

BrunWord Features

*40, 80 or 128 column display. *Touch typing speed over 200 words/min. *True insert or overwrite. *Justify or unjustify paragraph or whole text. *Justified text has balanced appearance. *Instant word wrap. *Block save, move, copy, insert and delete. *Local editing with word delete/undelete. *Adjustable margins and TABs. *Column/Line/Page display with file name. *True word count. *Find and replace. *Help menus. *Memory filing system. *Single character embedded printer commands (18 with 3 codes and 21 with 10 codes). *Page throw markers. *Multiple copies. *Odd/even page headers/footers with page numbers. *Multi file printing (new page or continuous). *Print specified pages. *Works with any printer. *True display superscript and subscript numbers. *User defined print characters. *Load/Save ASCII files from/to other word processors. *Files can be encrypted. *Maximum file size about 9 pages of text.

BrunSpell Features

*Memory resident. *Checks 4,000 words/min. *30,000 word dictionary. *No American spellings. *Add up to 5,000 of your own words. *Instant lookup. *Helps to find correct spelling. *Automatic correction.

DataFile Features

*Alphabetical, numerical, date sorting. *User defined headings. *Search routine. *Data merging. *Label printing.

Free Booklet

Our 16 page free booklet explains all about our programmes. No need to write a letter, just send a large (A4 size) SAE to 'BrunWord & Printer', Brunning Software, at the address below.

Info-Script £50

Info-Script is a complete data processing package and includes all the features of BrunWord 6128 and BrunSpell. The word processor and database can be resident together giving the speed and convenience of access to both programmes with no disc delays.

Database Features

*Very fast (e.g. takes 1 second to search 2000 addresses for surname 'Smith', initial 'B'). *Specific field search and/or progressive general search. *Instant sort on any field, alphabetical, numerical, date or reverse order (takes no time as the data does not move). *3 sets of user defined headings for each file. *4 markers for instant selection, plus one temporary marker. *Markers can be cleared or inverted and any pair can be added (allows complex searches to be quickly and easily performed). *No setting up of field type or length. *Efficient storage. *Relational records, Parents, Sons and Daughters. *Simple field to field arithmetic with running total. *Direct data merging into BrunWord. *Easy direct label printing, 1 across, 2 across, left of 2 or right of 2. *Single or multi-step.

Data Merging Features

*Simple intelligent system, &N &A &D construct full name, full address and date. *&1 &2 etc specify individual fields. *Insert or fixed format merging. *Automatic justify after merging. *Single step (see before printing) or multi-step. *Stop any time, go to word processor, restart same place. *Merge data from several records for summary, invoice, purchase order etc. *Simple arithmetic. *Running total. *Running VAT total. *Conditional loading. *Conditional printing. *Repeat patterns.

Quotes

"It may seem that I have just written a very long advert for BrunWord 6128 but I haven't, I'm just so impressed." (Phil Craven, ACU Feb 90, page 25).

"One such is Peter Brunning's BrunWord 6128 which is without doubt in my mind, the most powerful and friendly word processor available for the 6128 today, with the possible exception of.... BrunWord Elite!" (David Dorn, ACU July 90, page 43).

BrunWord Elite £55

Most word processors, including BrunWord 6128, are able to drive both daisy wheel and dot matrix printers. This creates the need for a style of printer control that is acceptable to two very different types of printers. BrunWord Elite does not have this restriction as it is specifically written to be used only with dot matrix printers. This gives it a unique advantage over other word processors and as a result it is able to provide much more advanced printer control. This is taken even further, as BrunWord Elite is supplied with an 8 Bit Printer Status Port which allows the programme to continuously monitor the status of the printer, (and provides the missing 8th bit for the original CPC6128). This enables the programme to respond in a more sophisticated way than normally possible. It will wait for ON LINE or <ESC> if the printer is initially OFF or OUT OF PAPER but automatically returns to the editor if the printer is turned OFF.

24 Pin Fonts

Before we designed the fonts for BrunWord Elite, we studied several good magazines. Fineline and Finetype are our variations of the two styles commonly used. Fineline is supplied in 3 sizes and Finetype in 2 sizes. To these we added a display font in computer style and a straightforward 'Heavy' font. Altogether there are 7 fonts supplied, 4 are full 24 pin, 2 are middle size 21 pin and one is a small size 16 pin font.

BrunWord Elite Features

BrunWord Elite has all the features and speed of BrunWord 6128 and BrunSpell, plus:-

*Print in columns *Specify page layout *Use special high quality proportional fonts *Use advanced micro justification with proportional text *Set printer margins independently *Move print head up or down paper, specified in inches from top *Set micro line spacing within text *Print line or box by specifying size and line thickness *Use absolute TABs with proportional text *Download a file directly from disc during printing. *Can be supplied with Info-Script for data merging.

Headline

Headline is a print enhancement utility for use with low cost 9 pin printers. It enables virtually all the features of BrunWord Elite, including the 24 pin fonts, to be used with any 9 pin Epson compatible printer with quadruple graphics (that's all well known modern 9 pin printers). Features include micro justification of proportional text, single, double or eight times height and 1 to 9 times width.

Comparisons

We have tested BrunWord 6128, Protext and Tasword 6128 with the same file of 3366 words.

The first test was to compare the scrolling speed of the screen, using line by line scrolling. This is a vital performance test as the CPC6128 tends to be naturally slow at this task. BrunWord scrolled 40% faster than Protext which in turn scrolled 19% faster than Tasword.

Protext was the fastest to justify but used a simple process that added spaces at the centre of each line, giving the middle of the text a bulging appearance. It did not display as it went along and so needed a separate operation to see the result. BrunWord displayed as it justified and produced the best appearance of all three. BrunWord was 30 times faster than Tasword.

Our simulated typing test achieved 218 words per minute. Both BrunWord and Protext had no trouble at this speed but Tasword was very slow inserting text into the start of a paragraph and could only handle 16 words per minute.

The spelling test checked all 3366 words. BrunSpell took 52 seconds and needed no disc changes. Prospell took 6 min 24 sec and needed 8 disc changes. Taspell took 18 min 46 sec and needed 3 disc changes.

How They Compare

	BrunWord 6128 & BrunSpell	Protext Disc & Prospell	Tasword 6128 & Taspell
Typing into 241 word paragraph Typing into start of text	218 w/m 218 w/m	218 w/m 218 w/m	16 w/m 150 w/m
Scroll to end, line by line	1 min 27 sec	2 min 2 sec	2 min 25 sec
Justify paragraph of 241 words	1 sec	0·2 sec	34 sec
Change appearance to format and Appearance to Format	17 sec	17 sec	53 sec
Spelling check 3366 words Average speed Disc changes	52 sec 3883 w/m None	6 min 24 sec 526 w/m 8	18 min 46 sec 179 w/m 3
Spelling help 'NECESERY' Spelling check word at cursor	1 sec 0·5 sec	12 sec Not possible	Not possible Not possible
Screen format - columns Page boundaries	40, 80, 128 Shown	40 or 80 Not shown	80 only Shown

9 Pin Elite

The Elite system for 9 pin printers consists of BrunWord Elite, BrunSpell, Headline, 8 bit printer status port and 7 'type setting' fonts (fonts are 24 pin in size but only for 9 pin printers). Total price £55.00 inclusive.

9 Pin Elite+Info

The Elite system as above but including Info-Script and a backup disc. Total price £92.00 inclusive.

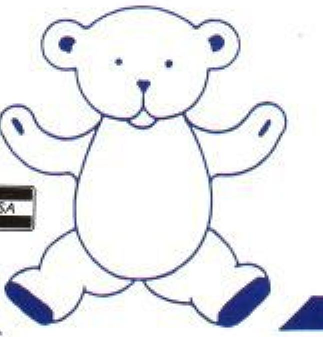
24 Pin Elite+Info

BrunWord Elite, BrunSpell, Info-Script, back up disc, 8 bit status port and 7 'type setting' fonts for downloading to a 24 pin printer. Total price £90.00 inc.

Send cheque/PO/Access number/Visa number to:

Brunning Software

34 Helston Road,
Chelmsford, Essex, CM1 5JF
Telephone (0245) 252854 (24 Hours)



BrunWord 6128 with BrunSpell & DataFile. . . £30.00
Info-Script with BrunWord 6128 & BrunSpell. . £50.00
9 Pin BrunWord Elite £55.00
9 Pin BrunWord Elite with Info-Script. £92.00
24 Pin BrunWord Elite with Info-Script. £90.00
100 Letters (needs Info-Script). £15.00

Supplied on 3in Disc for CPC6128 or CPC6128 Plus.
You must state which computer.

All prices are inclusive for UK. Overseas orders sent insured air mail - Europe add £2.50 : Rest add £7.50

Published by MSM Ltd.
A division of MCPC Ltd.
Panini House 116-120
Goswell Road,
London EC1.
Tel: 071-490 7161

Chris Knight

John Taylor

Columnists
John Cook
Vyk Olliver
John Kennedy
David Dorn

Designers
Paul Ellis
Adrian Hulf

Julian Sharp

Advertising Manager
Richard Vaughan

Advertising Executive
Linda Jorgensen

Production Controller
Jayne Penfold

Production Assistant
Michelle Evans

Publishing Director
Ray Lewis

Managing Director
Peter Welham

Subscriptions
LAZAHOLD
PO Box 10, Ropper Street,
Pallion Ind. Est.,
Sunderland SR4 6SN.
Tel: 091 510 2290.

Yearly rates:
UK £17.40
Europe £24.20
Middle East
£24.50
Far East £27.10
Rest of the World £25.00
USA $41.65

Distribution
SM Distribution. Tel: 081-677 8111

Colour and Mono Origination
Ebony
Heathlands Industrial Estate
Liskeard, Cornwall
Tel: 0579 46880

Published on 1st Thursday of month preceeding cover date

REGULARS

FEATURES

List query

I seem to remember that once upon a time you could write in and get a listing on disc/tape. Can you still get these? Was it even ACU?

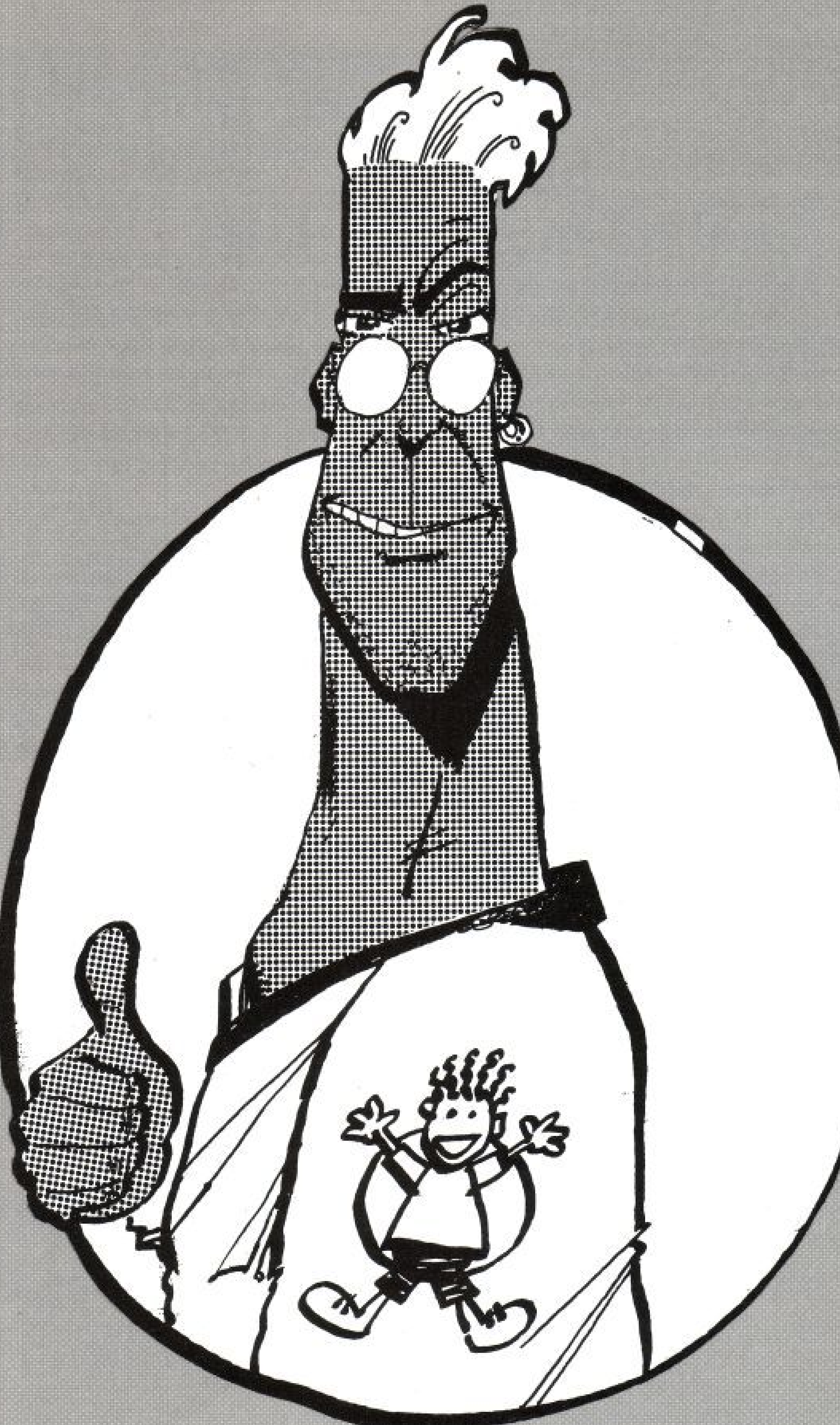
By the way, what does PD mean?

PS. If anyone out there wishes to make a robot, your best bet is to use the printer port.

PPS. How about a photograph of the columnist.

C. Sandiford, Leyton, London.

Ziggy: Hmm, not sure if it was you know, but never mind. What the ACU team intends to do, is make all listings and 10 liners available on the Maxwell House Bulletin Board for downloading. The number, in case you've forgotten, is 071 828 1577, so keep your eyes peeled. PD is the shortened form for Public Domain, which are programs available for copying and using free of charge from boards up and down the country, as opposed to copyrighted games and utilities. Thanks for the robot tip, but as for the photograph, please spare us. The only reason I'm done in cartoon style is to spare you readers the awesome reality of my ugly mug, so there.



ZIGGY'S MAILBOX

Mega mag

We were hoping to start a small magazine called 'RoSo is it' up and we were wondering what the cheapest printer for the Mega CPC 464 was. Please tell us because we are fed up with getting different answers. By the way, ACU is fab, just likeThunderbirds.

Robert and Sean Pritchard, Ingatestone, Essex.

Ziggy: Golly, the ACU boys are truly honoured to be mentioned in the same sentence as the International Rescue team, the only problem being that Hairy and Auntie John have just started a big row about who's going to be Virgil. Never mind, one of the cheapest printers around for your purposes is the Star LC10, which you can pick up for around £170. However, shop around, and even keep your eyes open for second hand items, which will mean forking out a lot less for your new mag. Good luck.

Showtime

I have been an avid reader of your magazine since issue 1 and I think it is fab. The only thing is, why are all the computer shows in England? Why not, for instance, hold one in the SECC in Glasgow for a change?

Martin Sutcliffe, Glasgow.

Ziggy: Good point indeed! Do any of you readers know of any local shows up there that Martin Might be interested in? At present, Amstrad tell me that they have no news of any shows scheduled in Scotland, but you never know, next year might see something coming up your way.

Upgradeability

I feel that this subject is probably a regular topic of correspondence but I would appreciate your comments on the pros and cons of upgrading our current family 464, which is now approaching four years old. Originally bought as a toe dipper in the pool of computerisation, it has proved a good success in terms of family entertainment and as a word processor for business and hobby use.

For business use, I am now regularly using an Amstrad portable PPC640, courtesy of my employer and like many others, I suspect, I am greatly impressed by the speed of the disc work as opposed to tape. The children are clamouring for quicker loading and more detailed games-a cousin has the Amiga 500 package – and the time is probably right to upgrade, but how?

Does one simply look to a direct replacement by purchasing a 6128 or is there an effective means of upgrading to 6128 facilities by way of disc drive/ 64k memory expansion?

Derek Hall, Solihull, West Midlands.

Ziggy: Well, you certainly have a few options, but probably the cheapest is to upgrade for the time being. From Datel Electronics, regular advertisers in ACU, you can get 64K, or even 256k, memory expansion packs, which simply plug into the back of your machine. At the same time, disc drives, which used to retail at around £150, seem to be plummeting down in price at the moment and I'm told you can pick one up for as cheap as round £30 nowadays. You could try ringing the Amstrad User Club on 091 510 8787 about that. So, there you are, not too expensive all round.

The other option, of course, is to get hold of one of the new CPC 6128 + machines, which will set you back around £429 with a colour monitor. The choice is yours.



Odd conversions

The 10 liner CONVERT was pretty neat (ACU September). I had done a conversion program myself last month, it covered more conversions but was not nearly so compact in design. However, I trust no quantity surveyor decides to use yours because it would produce a very remarkable result. It gives 1 cubic foot equal to 35 cubic metres! The fault lies in line 80, where the items "cubic feet, cubic metres" should be reversed, as should the items "cubic yards, cubic metres". This should be obvious as lines 60, 70 and 90, the metric measurement appears before the imperial.

P. Reynolds, Penarth, South Glamorgan

Ziggy: Ooops, we'll be tripping over our own imperial feet next! Thanks for pointing out the error Mr Reynolds.

Summing up

I am a secondary Mathematics teacher of a local school and constantly looking to incorporate microcomputers into children's learning experience. A great deal of educational software exists for many machines and yet one of my pupils told me that he had not been able to find any educational Mathematics software for his Amstrad 6128 CPC.

Do you know of any companies that produce such products and if so could you please tell me their address?

Mr A.J. James, Southend-on-Sea, Essex.

Ziggy: Sounds like a touch of the old Lazyitis to me, (I know, I used to suffer from it at school too. School Software do indeed produce exactly what you are looking for in the shape of Maxi Maths, which is aimed at the 9-15 year olds and includes sections on triangles, angles, sin, cos, tan, rectangles, circles, a bit of basic algebra and even a full GCSE revision course.

For just £16.95, plus £1 postage and packing, you can get a copy from School Software at the Tait Business Centre, Dominic Street, Limerick, Ireland.

Alternatively, fill in the appropriate coupon on page 66 of the September issue of ACU. No problems.

DATEL ELECTRONICS



dk'tronics

64K AND 256K MEMORY EXPANSION

- Simple plug in memory expansion gives instant extra memory.
- Features bank switching software for easy use by the programmer or for use as a data storage area.
- The software also features some extra BASIC commands.
- 64K unit expands 464 to 128K. The 256K unit takes your 6128 to 320K!!
- 64K unit brings 464 up to CPC 6128 memory configuration making a much larger software base available. Will work straight off with many programs designed for this unit (including OCP Art Studio - see Ad.).
- Ideal for use with the CPM 2.2 etc.
- Bank switching done automatically by software (cassette 464 - disk 6128).

ONLY £49.99 64K FOR 464
ONLY £99.99
256K FOR 464 OR 6128 (PLEASE STATE)

THE RAM MUSIC MACHINE IS PROBABLY THE MOST EXCITING MUSIC ADD-ON AVAILABLE FOR ANY COMPUTER



RAM music machine

- It's a full sound sampling system allowing any sound to be recorded digitally into the computer RAM. Once stored, the sound can be replayed at different pitches with many varying effects.
- It's an echo chamber & digital delay line. Create some very interesting effects.
- It's a two voice music/sound synth.
- The Music Machine can also be used as a drum machine - eight drum sounds are already provided for you, but you can easily produce more of your own.
- The extremely powerful software allows you to compose tunes from individual bars of music. You can edit your creations on screen & Save/Load sounds, instruments & rhythms.
- Fully MIDI compatible. The Ram Music Machine supports full MIDI In, MIDI Out & MIDI Thru.
- Output through your Hi-Fi or Headphones. Comes complete with microphone.
- Use a full size MIDI keyboard to play the Music Machine.
- Sounds produced by the Music Machine can be mixed with a MIDI synthesiser's own sounds.
- On screen Sound Editor can produce MIDI data from your own compositions.
- Various sampled sounds are provided in order to get you going.
- No other product can offer so much in one unit - it's the TOTAL SOLUTION!!

ONLY £49.99
FOR THE BEST MUSIC ADD-ON AVAILABLE FOR THE AMSTRAD

AMDRUM



- **Now you can turn your Amstrad into a real Digital Drum Machine.**
- AmDrum from Cheetah Marketing is a superb plug in device that produces "real" drum sounds via its unique digital system.
- On screen menu driven drum kit makes composing drum sounds easy for anyone to do!
- Just plug the output into your Hi-Fi, cassette player, etc. and that's it - your Amstrad is a drum kit!!
- Comes complete with DrumKit Sound plus extra DrumKit and Kit Editor Program (worth £9.99) absolutely FREE!!

ONLY £14.99

SPEECH SYNTHESISER & STEREO SOUND BOOSTER

- This easy to use Speech Synthesiser includes a powerful Stereo Amplifier and two pod speakers which are an enormous improvement on the sound supplied by the internal mono speaker.
- Speech output is monorial but directed to both speakers. Booster gives stereo to computer internal sound output.
- Using the SPO/256 Speech Chip the unit has almost infinite vocabulary.
- Text to speech software is provided in ROM to make speech output simplicity itself.
- Voicing is transparent to the user and the computer can carry on with other program tasks as necessary.



ONLY £29.99
464 OR 6128 (Please state which)

dk'tronics

LIGHTPEN/GRAPHICS SYSTEM

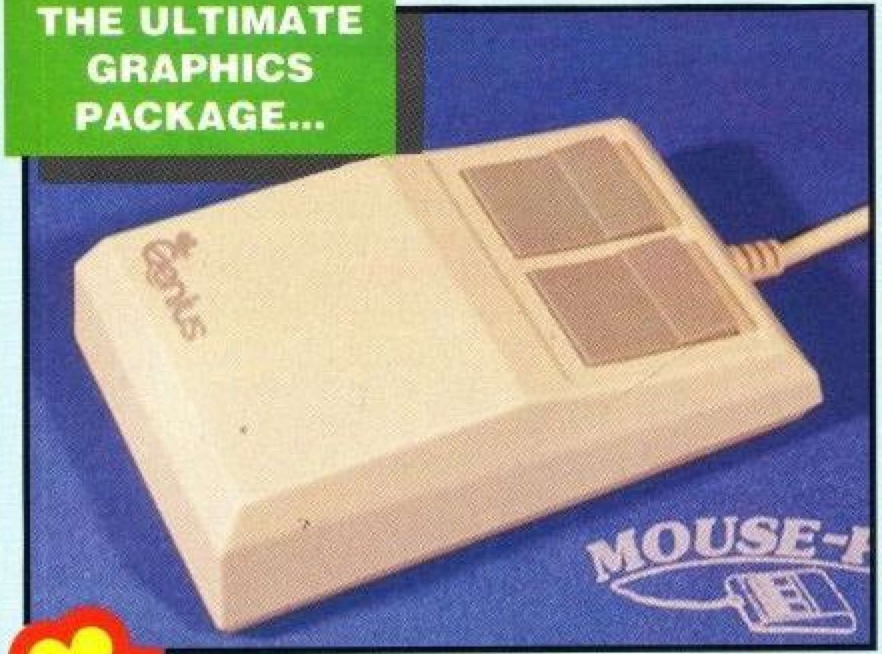


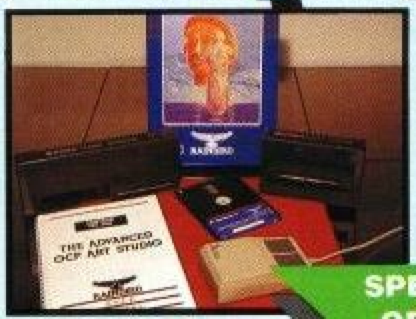
- Complete Lightpen and graphics system lets you create a whole range of effects on screen.
- It can magnify, shrink, colour fill and create circles, rectangles, lines and curves.
- Pictures can be edited at pixel level using a scratch pad which is magnified to a full screen.
- Picture storage and retrieval, and a pen calibration feature.
- Printer dump utilities for Epson/Amstrad printers supplied (on cassette).
- Complete package - no more to buy.

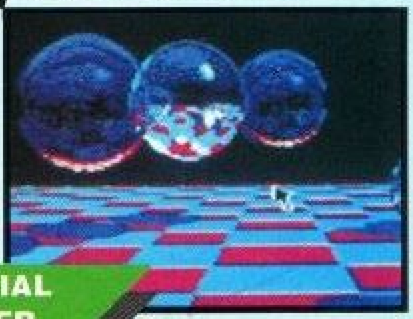
ONLY £14.99 CASSETTE
OR £24.99 WITH SOFTWARE ON ROM - NOTHING TO LOAD 464 OR 6128 (Please state which)

DATEL ELECTRONICS

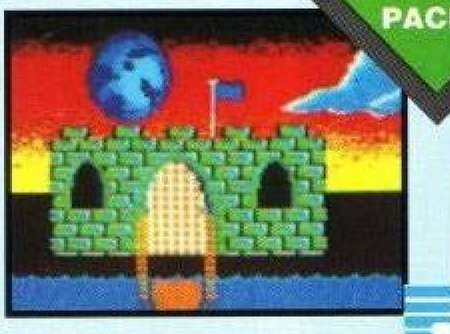
THE ULTIMATE GRAPHICS PACKAGE...







SPECIAL OFFER PACK!





Genius Mouse

COMPLETE WITH

OCP ADVANCED ART STUDIO™

- Genius Mouse is a high resolution two button mouse featuring optical counting, teflon guides, microswitches, rubber coated ball and high quality interface.

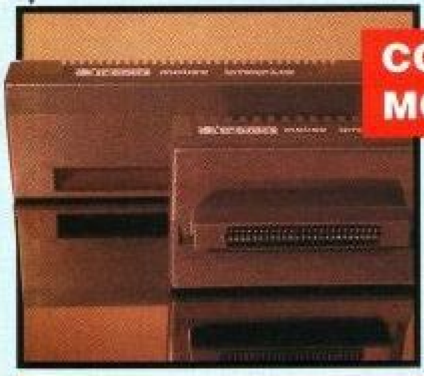
TAPE OR DISK FOR 464 OR 6128 (PLEASE STATE WHICH REQUIRED) N.B. 464 NEEDS DK' 64K RAM PACK

ONLY £49.99

TOTAL PACKAGE INCLUDES MOUSE, INTERFACE, ADVANCED ART STUDIO, MOUSE MAT AND HOLDER

- When combined with OCP Advanced Art Studio this graphics package is quite simply the best system available. The features are unmatched...

- Create an image - shrink it, expand it, move it, rotate it, copy it, colour it etc., etc.
- Spray patterns or shades, make elastic lines - stretch and manipulate shapes.
- Zoom in to add detail in fine mode.
- Pulldown/Icon driven menus for ease of use.
- Mouse operation, plus joystick and keyboard control.
- 16 pens, 8 sprays, 16 brushes - so flexible anyone can create superb graphics easily.
- Full cut and paste facilities plus excellent printer support.
- Pixel edit, font editor, flip, invert, rotate, solid or textured fill and professional manual make Advanced Art Studio simply the best graphics package.



COMPLETE WITH MOUSE INTERFACE

- The Genius Mouse Graphics System comes complete with the special Mouse Interface to allow super smooth control.
- Attractively styled to match your 464 or 6128 design and colour.
- Simply plugs into Expansion/ Joystick Port.



FREE!

MOUSE MAT AND MOUSE HOLDER

(WORTH £12.99)

WITH EACH PACKAGE

ONLY WHILE STOCKS LAST

A TOTAL GRAPHICS PACKAGE

SAVE OVER £25

- NO OTHER GRAPHICS PACKAGE CAN OFFER SO MUCH AT SUCH A PRICE!!
- OCP ADVANCED ART STUDIO ALONE NORMALLY RETAILS FOR £25.00. THE MOUSE SYSTEM HAS A NORMAL PRICE OF £39.99. NOW YOU CAN BUY BOTH FOR ONLY £49.99 AND GET A MOUSE MAT AND HOLDER (worth £12.99) ABSOLUTELY FREE.
- WE HAVE LIMITED NUMBERS OF THESE PACKS - SO BUY NOW!

WHAT THE MAGAZINES HAD TO SAY...

AMTIX "CLASSIC"

C.T.W. "PICK OF THE WEEK"

AMSTRAD COMPUTER USER "BEST UTILITY OF THE YEAR"

ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER ...

BY PHONE	BY POST	FAX
0782 744707 24hr Credit Card Line	Send cheques/POs made payable to "Datel Electronics"	0782 744292 UK ORDERS POST FREE EUROPE ADD £1 OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.

DATEL ELECTRONICS

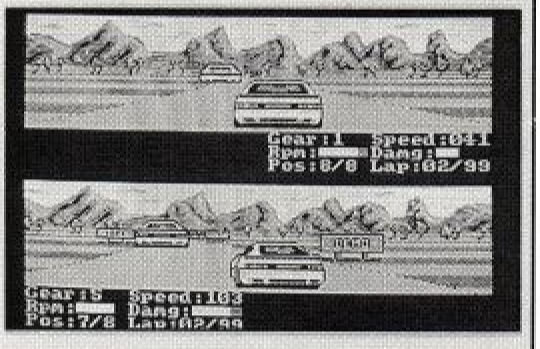
DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

SALES ONLY 0782 744707

TECHNICAL ONLY 0782 744324

LOTUS ACTION

Here's some more excellent news for race fans! Gremlin Graphics has got together with Group Lotus to produce a red hot two player, 3D action chase in *Lotus Esprit Turbo Challenge*.



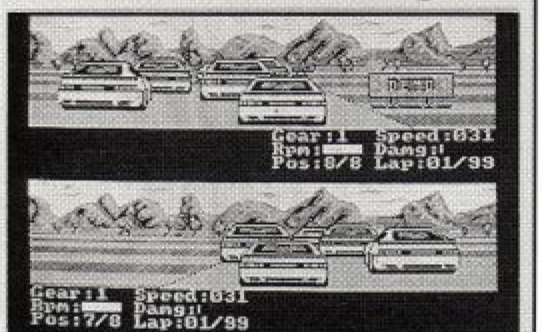
Using split screen graphics, the game can be played against the computer or a friend and features thirty two different tracks over three increasing levels of difficulty.

The aim of the game is to qualify for the Lotus License, which can only be achieved by winning the championship on the hardest level. To make it even more tricky to win, if you finish first on any race, you start the next one right at the back of the grid.



Tricky, what?

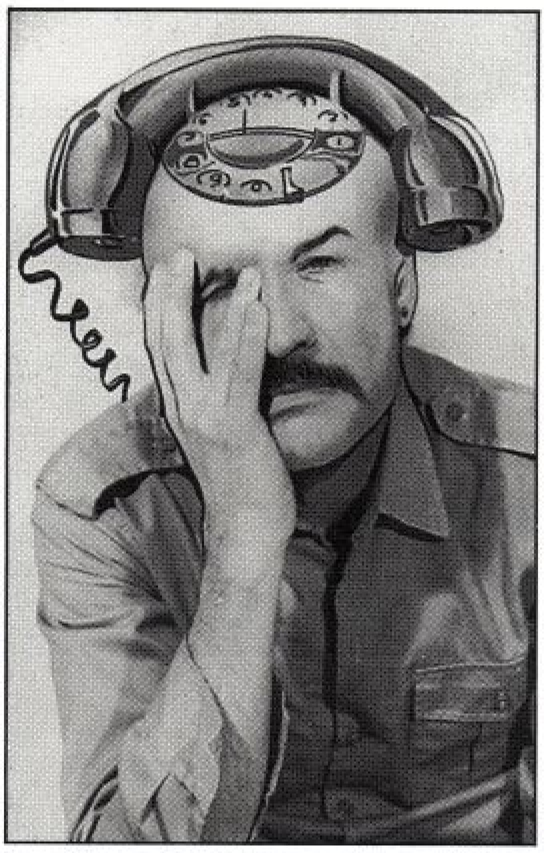
Throughout the race, you'll also need to check on your fuel status. Stay too long in the pits and you may lose out, but it beats running out of



gas on the last lap.

To cap it all, if you qualify for a licence, you can send in a special form to Gremlin, in return for which you'll get a certificate made out in your name.

Lotus Esprit should be in the shops soon, so get ready to put your driving skills to the ultimate test.



TIP TOP TIPS

Those of you who have tried out Mel Croucher's computer fan line will no doubt of heard of the mega hot Megatip Gamesline from Hot Shot Entertainments. Giving you all the latest hints on your favourite games, why not give it a try on 0898 299388. You could just find that elusive clue you've been searching for for hours.

GREEN PRINTING

If you're worried about the environment (aren't we all), then why not chuck out your old printer ribbon and replace it with something more environmentally friendly from Kores.

On average, each of the new Kores ribbon cartridges now contains 60% of recycled materials, with no loss in quality and without putting up prices from existing ribbons.

As Kores' MD Hal Adams says: "We now have a corporate policy of making ourselves aware of the impact of our activities on the environment and conducting our business in the light of development and evolution of technology".

Can't say fairer than that, can you? So if you want to help our planet out, even if it is only a printer ribbon, ring Kores on 0279 454455 and put some green into your printing.

CHALLENGING MOVES

Games and utilities experts Challenge Software have moved on to pastures new in sunny Cheshunt.

The new address if you want to get hold of up to the minute programs, utilities, as well as the latest offerings on the E & J budget label is:

Challenge Software
Hatton House
Church Lane
Cheshunt
Herts
EN8 0DW

If you want to make any orders by phone, the new number is 0992 640600.

FAVE REVIEW

Yes, the popularity of our favourite machine has given rise to yet another fanzine, this time called Review and based in Staffordshire.

Packed full of games, machine code tutorials, technical tips, adventure, hardware projects and reviews, this little lot is managed by 15 year old Simon Williams, with a little help from his friends.

The Fanzine has just celebrated the launch of its first issue, so if you want to get in on the action, do it now and follow each series from the start, there should be plenty of goodies in there.

To get hold of your copy of Review, write to Simon Williams at 24 Chalcot Drive, Hednesford, Staffs., WS12 4SF.



UPGRADE FOR FREE

Those of you who have sent off for the Blitz BASIC compiler from SPM Software recently may have experienced some delays in getting hold of your copies.

Never fear, SPM assure us that any problems have now been ironed out and everyone should by now have their copies of Version 1.1.

Hold on, this is the good part! Just to show what generous people they are, SPM are now offering an upgraded version free of charge and all you have to do is send in your master disc with an SAE to get it.

Here's the address for those of you lucky people who sent off for the original Compilers: SPM Software, 32a Albert Street, Seaham, County Durham, SR7 7LJ.



RACE MANIA

Just when you thought it was safe to venture back out onto the pelican crossings, Domark has once more struck terror into the hearts of Sunday morning drivers with news of its latest smash racing compilation, *Wheels of Fire*.

In one incredible package, the Putney based games house has put together the four biggest selling driving games of the last year to create the Definitive Driving Pack.

First up is Domark's own Hard Drivin', which sees you taking your life in your hands against the Phantom Photon and the awesome loop-the-loop.

Ocean's blockbuster Chase HQ puts you in charge of the turbo-charged Porsche in a frantic battle to bring the bad guys to task.

For sheer variety, you can't go wrong with US Gold"'s 16 stage Ferrari bash across America and, if that weren't enough, hold onto your seat as you try out the 27 gruelling circuits in Acti-vision's whacky Power Drift.

Race fans prepare to be knocked out with this amazing package, which should be out sometime this month for just £19.99 on disc and £14.99 on



MASTER GOLF

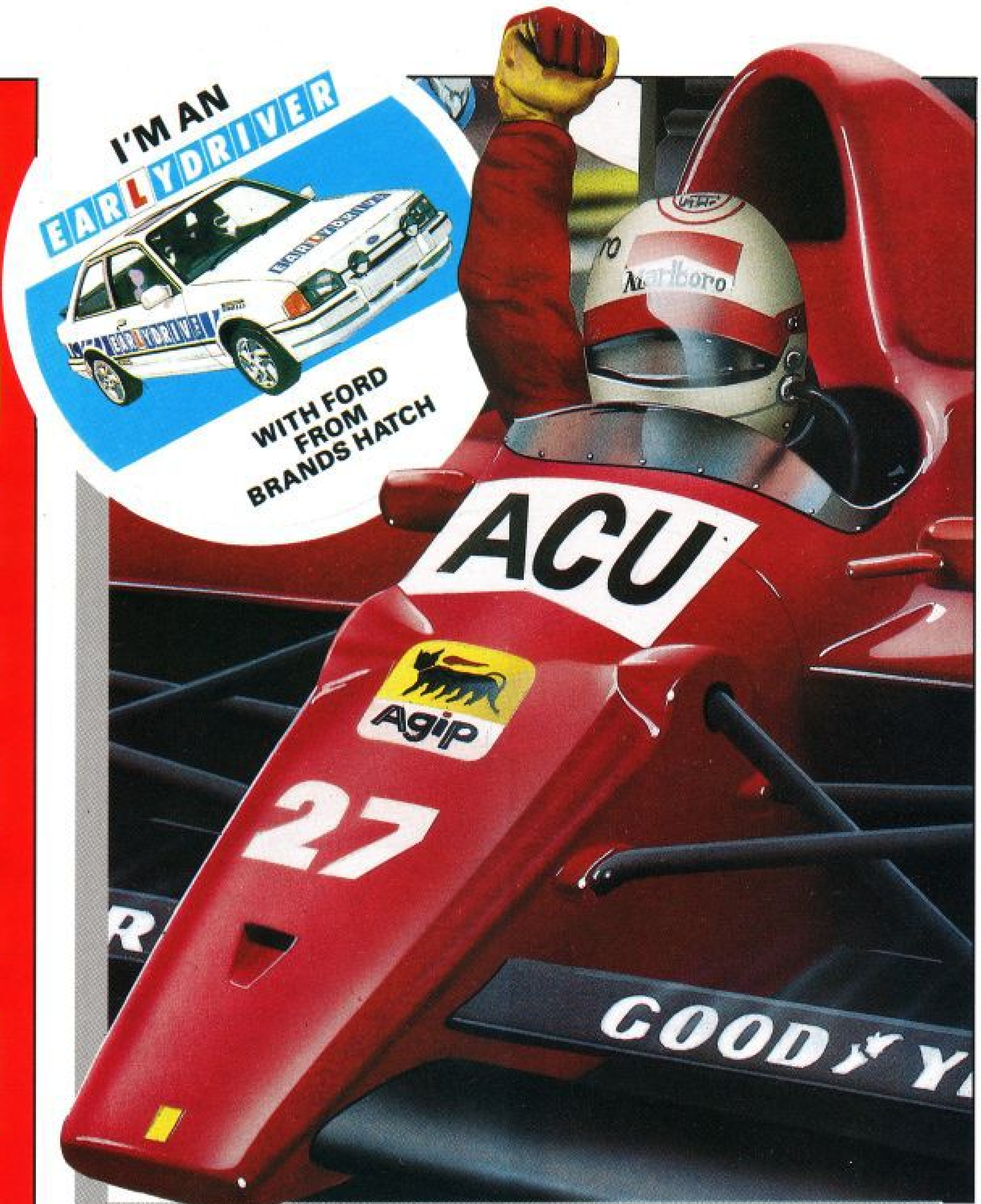
Look out for the latest budget release from Code Masters in the form of Pro Golf Simulator.

Featuring all of the hazards of championship golf, roughs, bunkers, trees, lakes and realistic fairways, you can choose from all the usual clubs, as well as zoom in when you get to the putting arena.

For just £2.99, no serious golf lover can afford to be without this excellent taste of the real thing.



COMPETITION



To coincide with this month's fab Grand Prix Circuit spread, here's your chance to get in a spot of driving practice of your own around the famous Brands Hatch racing course.

Earlydrive, a special scheme allowing under 17's to get a feel for the road, has been set up by the Brands Hatch Leisure Group together with Ford Motors and offers expert tuition both in the classroom and on the road. So, if you want to get ahead of the rest with one of your parents, just send in your best drawing of a formula 1 racing car to win this great day out.

Don't worry if you don't win, there are 10 sets of fantastic Accolade Summer Sweat-shirts and Shades to be won by the runners up.

The editor's decision is final.
Send your entries to:

Grand Prix,
ACU,
MSM Ltd.,
116-120 Goswell Road,
London EC1V 7QD.

DISCOUNT SOFTWARE

from M.J.C. SUPPLIES

DISC GAMES

MJC SPECIAL
SIM CITY
RRP £14.95 /**Our Price £9.95**
Offer ends 31st October 1990

Bloodwych	1095
Castle Master	10.95
Cycles	12.95
Dan Dare 3	10.95
Double Dragon 2	10.95
Dragons of Flame	14.95
Dynasty Wars	10.95
E-Motion	10.95
Fighter Bomber	**14.95**
Ghostbusters 2	10.95
Heroes	14.95
Impossamole	10.95
International 3-d Tennis	**10.95**
Jack Nicklaus Golf	12.95
Klax	10.95
Lords of Chaos	10.95
Oriental Games	10.95
Pipe Mania	10.95
Rainbow Islands	10.95
Scrabble De Luxe (6128 only)	11.95
Shadow Warrors	10.95
Tolkein Trilogy	12.95
Turrican	10.95
Tusker	10.95
World Cup Italia 90	10.95
X-Out	10.95

EDUCATIONAL

Animal, Mineral, Vegetable	11.95
Learn to Read with Prof (4-9)	17.95
Answerback Junior Quiz	**11.95**
Factfile's (*require Answerback Quiz*)	
Arithmetic (6-11 yrs)	7.95
Spelling (6-11 yrs)	7.95
Sports (6-11 yrs)	7.95
Fun School 1 ***10 programs per disc***	
For 2-5 years	7.95
For 5-8 years	7.95
For 8-12 years	7.95
Fun School 2 ***8 programs per disc***	
For 2-6 years	9.95
For 6-8 years	9.95
For 8-12 years	9.95
French Mistress (*12-adult*)	**15.95**
German Master	15.95
Spanish Tutor	15.95
Italian Tutor	15.95

CASSETTE BASED

Mini Office 2	**9.95**
Maxam 464	15.95
Protext 464	15.95
Tasword 464	15.95
German Master 464	14.95
French Mistress 464	14.95
Answerback JNR Quiz	8.95
Italian Tutor	14.95
Spanish Tutor	14.95

DISC SERIOUS

Protext	**17.95**
Prospell	**16.95**
Promerge	16.95
Tasword 6128	**23.95**
Tasword 464-disc (464/664)	23.95
Taspell	14.95
Tasprint	11.95
Tascopy	11.95
Tasdiary	11.95
TasSign *(6128)*	23.95
Qualitas Plus v2	**14.95**
Qualitas Font Library	11.95
Qualitas CPM+ disc	8.95
Miraprint *(24 pin Qualitas)*	19.95
Miracopy *(24 pin screen dump)*	
Masterfile 3 (Database)	**29.95**
Mastercalc 128 (Spreadsheet)	25.95
Matrix *(Spreadsheet)*	29.95
Stockmarket *(share analysis)*	25.95
Money Manager *(home accounts)*	24.95
Stop Press Desktop Publisher	**34.95**
Extra! Extra!	19.95
X-Press v1.1	18.95
X-Press V2.0	22.95
Sprites Alive!	**18.95**
Sprites Alive! Compiler version	24.95
Maxam assembler	18.95
Mini Office 2	13.95
Advanced Art Studio	19.95
ColourDump 2	**12.95**

CPM BASED

Protext CPM (inc Spell & Merge)	**39.95**
At Last Plus	29.95
Supercalc 2 *Special price*	**29.95**
Arnor C Compiler	39.95
Hisoft C Compiler	39.95
Maxam 2	39.95
Hisoft Devpac 80 version 2	39.95
Nevada Fortran compiler	39.95
Nevada Cobol compiler	39.95
Hisoft Pascal 80	39.95
Iankey Crash Course	19.95
Iankey Two Finger Typing	19.95

CF2 DISCS
Maxell: 5 for £12.00
10 for £21.95
Amsoft: 5 for £13.00
10 for £23.95

ROM BASED

Protext	27.95
Prospell	22.95
Promerge +	22.95
Maxam	27.95
Maxam 1.5	20.95
Utopia	20.95
BCPL	21.95
Rombo (if purchased with ROM)	28.95

ACCESSORIES

Mastering Machine Code book	**8.95**
Programming the Z80 book	23.95
DKT 64K Memory Expansion	**45.95**
Multiface 2 Plus	42.95
KDS 8 bit Printer Port	18.95
CPC-Centronics Printer Lead	**9.95**
464 Keyboard- Monitor Ext Lead	6.95
6128 Keyboard-Monitor Ext Lead	7.95
FD1 Disc Drive Lead (664/6128)	7.95
Monitor & Keyboard Dust Covers	**7.95**
(state Colour/Mono & 464/6128)	
3" disc drive head cleaner	6.95
1000 Fanfold address labels	7.95
Quickjoy 2 Turbo Joystick	**9.95**
Cheetah 125 Plus Joystick	7.95
Crusier joystick	9.95
Competition Pro 5000 Joystick	13.95
AMX mouse & interface	**34.95**
Advanced Art Studio and Mouse	49.95
AMX Art software & mouse	59.95
Stop Press and mouse	64.95

DISC DRIVES

DD1 first drive	**89.95**
FD1 second drive	**69.95**

(FD1 Lead required on 664/6128)
while stocks last

NEW 3 1/2" DISC DRIVES

Quality CUMANA branded 3 1/2" disc drives enabling your CPC to use the cheap 3 1/2" discs either standard 178k format or with Ramdos formats up to 800k can be used.
The drives come complete with built in power supply, on/off switch, cable, and even a 3 pin plug.
Suitable for all CPC's, although 464 owners must have a DDI-1 before these drives can be used.

3 1/2" Disc Drive (complete)	**79.95**
Ramdos (big format software)	**19.95**
ROMdos (as above, with ROM)	**24.95**
10 3 1/2" blank discs	**6.95**
20 3 1/2" blank discs	**10.95**

AMSTRAD DISC DRIVES
DD1 first drive (for 464) ***CALL FOR***
FD1 second drive (all CPC's) ***PRICES***
(cable required for 664/6128)

RIBBONS

Printer	Quantity 1	2	5
DMP 2000-3250	3.00	5.50	12.95
Panasonic KXP1081	3.95	7.00	15.00
Citizen 120D	3.95	7.00	15.00
Star LC-10 Black	3.95	7.00	15.00
Star LC24-10	4.95	9.00	18.00
Panasonic 1124	5.95	11.00	
Star LC-10 Colour	5.95	11.00	
Heat Transfer Ribbons (for iron-on transfers)			
Citizen 120-D	12.95	25.00	
Star LC-10 Mono	13.95	27.00	
Star LC-10 Colour	19.95	37.50	

ALL ABOVE PRICES INCLUDE VAT, POSTAGE & PACKING IN THE U.K.
THE ABOVE SOFTWARE IS ONLY FOR THE AMSTRAD CPC RANGE

Quali Pack V.2

The Print Enhancement Package
Qualitas Plus V.2
KDS 8 Bit Printer Port
R.R.P £36.90
Package Price £31.95

Quali Pack Extra V.2

Qualitas Plus V.2
KDS 8- bit printer port
Qualitas font library
RRP £51.85 Our Price £41.50

PRINT COLOUR GRAPHICS!

*At last it is possible to get colour screen dumps from a 6128! **Colourdump 2** is available exclusively from M.J.C. Supplies. Will take a standard screen file from the Advanced Art Studio or created with AMX Art, and Prints out in full colour on a Star LC10 colour printer. Also works on Epson compatibles (inc. DMP 2000/2160) with coloured ribbons.*

Cololur Dump 2 £12.95
Advanced Art Studio £19.95
Star LC-10 colour printer £219.95

All prices include cable, ribbon, VAT, and postage and packing.
Courier service available, add £5.
FEEL FREE TO CALL FOR ADVICE.

PRINTERS

All printers listed have a ten inch 80 column carriage and accept continuous or single sheet paper. They are Epson compatible and have a centronics parallel interface and are supplied with the cable required for your computer. Prices shown include VAT, delivery by Royal Mail Insured Parcel (which takes 7-10 days), and 12 month "return to us" guarantee.
For Courier despatch, add £5.00

CITIZEN 120D
A cheap, Epson FX compatible, giving a range of text sizes and effects in draft mode, and a limited range in Near Letter Quality.
£139.95

PANASONIC KXP - 1081
Well built and reliable, offers all the sizes and effects of the Citizen 120-D, but offers NLQ in all combinations.
£159.95

STAR LC-10 Mk 1
On a par with the Panasonic for build, speed and NLQ combinations, but offers 4 different NLQ styles and double height as well as double width text. Great value for money
£169.95

PANASONIC KXP-1180
Offers 4 NLQ fonts, and fast printing. A direct competitor for the LC-10 mark 2.
£179.95

STAR LC-10 Mk II
Identical to the Mk1 but 25% faster.
£189.95

STAR LC-10 COLOUR
Based on the LC-10 Mk 1 but offers seven basic text colours. If you require colour graphics, please call first for advice.
£219.95

STAR LC 24-10
24 pin version of the LC-10, offering great text output in one of five letter quality styles, available in combination with all the usual sizes and effects. Two additional effects, Outline and Shadow are also available. Call first for advice if you require graphics output.
£249.95

PANASONIC KXP-1124
Offers all the fonts of the 2410, but has a better print quality, build quality and control panel.
Please call for advice before ordering
£259.95

Overseas Orders Welcome - Please write for details

WE ARE NOW IN OUR FIFTH YEAR OF SPECIALISING IN AMSTRAD MAIL ORDER, OUR POLICY IS TO PROVIDE THE WIDEST RANGE AT DISCOUNT PRICES WITH A FAST TURN AROUND TIME - TRY OUR SERVICES WITH CONFIDENCE

CALLERS WELCOME: Mon-Fri 9 to 5 Sat 10 to 4

PLEASE SEND CHEQUES/POs TO:

VISA

M.J.C. SUPPLIES, (A.C.U.)

Access

40a Queen Street, Hitchin, Herts. SG4 9TS.

Tel: (0462) 432897, (0462) 420847 or 421415 for enquiries & Credit Card orders

Proprietor M J Cooper

O.J. SOFTWARE

FAST FRIENDLY SERVICE

ADVENTURE	Cass	Disc
Scapeghost	£11.95	£15.95
Bards Tale	£2.95	£6.95
Tolkein Trilogy	£10.95	£14.95
Pirates (6128) Only		£15.95
Bards Tale Hint Book		£4.50
Bloodwych	£8.50	£11.95
Lancelot	£11.95	£15.95
Countdown to Doom		£10.95
Dragons of Flame	£11.95	£15.95
Ingrids Back	£11.95	£15.95
Tolkein Trilogy	£10.95	£14.95

ARCADE	Cass	Disc
Lords of Chaos	£8.50	£11.95
Stunt Car Racer	£8.50	£11.95
Hostages	£8.50	£11.95
Batman The Movie	£8.50	£11.95
Heavy Metal	£8.50	£11.95
Back To Future II	£8.50	£11.95
Oper Thunderbolt	£8.50	£11.95
Untouchables	£8.50	£11.95
ESC Robot Monsters	£8.50	£11.95
Crazy Cars II	£8.50	£11.95
Robocop	£8.50	£11.95
Pipemania	£8.50	£11.95
Space Harrier	£8.50	£11.95
Bloodwytch	£8.50	£11.95
Shadow Warriors	£8.50	£11.95
A.M.C.	£8.50	£11.95
Fighter Bomber	£11.95	£15.95
Turrican	£8.50	£11.95
Ghouls & Ghosts	£8.50	£11.95
Double DragonII	£8.50	£11.95
Zombi	£8.50	£11.95
Dynasty Wars	£8.50	£11.95
Chase HQ	£8.50	£11.95
Int 3D Tennis	£8.50	£11.95
Super Wonderboy	£8.50	£11.95
Test Drive II	£8.50	£11.95
Klax	£8.50	£11.95
Rainbow Islands	£8.50	£11.95

JOYSTICKS	
Cheetah 125 +	£7.95
Quickshot II Turbo	£10.95
Konix Speedking	£10.95
Konix Navigator	£12.95
Cheetah Mach 1	£10.95
Pro 5000 Clear	£14.95
Pro 5000 Goal	£14.95
Starprobe	£13.95
Quickshot 130F	£9.95

COMPILATIONS	Cass	Disc
Mega Mix	£11.95	
Thrill Time Gold 1	£8.50	
World Cup 90 Comp	£10.95	£14.95
Thrill Time Plat	£10.95	£15.95
100% Dynamite	£11.95	
Coin-Op Hits	£11.95	£15.95
Leaderbd's Par 3	£11.95	£15.95
InCrowd	£11.95	
Epyx 21	£11.95	£15.95
Supreme Challenge	£10.95	£13.95
Joystick Thunder	£10.95	£14.95
Magnificent 7		£14.95
House Mix	£8.50	£11.95
Winners	£11.95	£15.95
Epyx Action	£11.95	£15.95
Story So Far 4	£8.50	£11.95
Starwars Trilogy	£10.95	£15.95
Soccer Spectac	£10.95	£13.95
The Biz	£11.95	
Story So Far 2	£10.95	£11.95
Game Set Match II	£10.95	£14.95
4th Dimension	£10.95	£14.95
Special Action	£10.95	£14.95

EDUCATIONAL	Cass	Disc
Funschool 2-5	£5.50	£7.50
Funschool 5-8	£5.50	£7.50
Funschool8-12	£5.50	£7.50
Funschool 11 UN6	£8.50	£10.95
Funschool II 6-8	£8.50	£10.95
Funschool II OV8	£8.50	£10.95
Happy Letters 3-6	£8.50	£11.95
Happy Numbers 3-6	£8.50	£11.95
Happy Writing 3-6	£8.50	£11.95
Wordhang 5+	£8.50	£11.95
Timeman I 4-9	£8.50	£11.95
Timeman II 4-9	£8.50	£11.95
Map Rally 7+	£8.50	£11.95
Animal/Veg/Min 7+	£8.50	£11.95
World Wise 7+	£8.50	£11.95
Physics GCSE	£11.95	£15.95
Chemistry GCSE	£11.95	£15.95
Play & Read	£16.95	£21.95
Here & There Mr Men	£9.95	
Caesers Travels	£9.95	
early Words	£8.95	£13.95
Early Maths	£8.95	£13.95
Primamry Maths 5-14	£24.95	£24.95
Micromaths 8+	£24.95	£24.95
Mega Maths 15+	£24.95	£24.95
Micxro English	£24.95	£24.95
Grannys Garden (6128)		£16.95
Dragon World (6128)		£20.95
Three Bears (6128)		£12.95
Giant Killer Maths ADV		£11.95
Maths Mania 8.12	£8.95	£12.95
Maxi Maths 9.14	£8.95	£12.95
Better Maths 12-16	£8.95	£12.95
Better Maths 12-16	£8.95	£12.95
Better Spelling 9+	£8.95	£12.95
Biology 12-16	£8.95	£12.95
Physics 12-16	£8.95	£12.95
Chemistry I 12-16	£8.95	£12.95
Geog Quiz GB + IR	£8.95	£12.95
Weather/Climate	£8.95	£12.95
French Mistress	£13.95	£16.95
Spanish Tutor	£13.95	£16.95
German Master	£13.95	£16.95
Italian Tutor	£13.95	£16.95
Answer Nack Jnr	£8.50	£11.95

STRATEGY/SIMULATION	Cass	Disc
EV/Star+SO/Belle	£10.95	£14.95
Colossus 4 Bridge	£9.95	£11.95
Colossus 4 Chess	£8.50	£11.95
Scrabble DeLuxe 128K		£12.95
Mindstreatchers		£15.95
Monopoly	£8.50	£12.95
Scrabble & Cluedo	£15.95	£15.95
Leaderboard Par3	£11.95	£15.95
jack Nicklaus Golf	£8.50	£13.95
Carrier Command 6128		£14.95
Chuck Yeagers Aft	£7.95	£11.95
F15 Strike Eagle	£8.50	£11.95
Footballer Year II	£8.50	£11.95
Gunship	£11.95	£15.95
Silent Service	£8.50	£11.95
Desert Rats		£11.95
Football DI II Disc		£15.95
Football Manag II	£8.50	£11.95
F/Mangr World Cup	£8.50	£11.95
Yes Chancellor Disc		£11.95
Arnhem	£8.50	£11.95
World Cup Soccer	£8.50	£11.95
Vulcan	£8.50	£11.95
Italy 1990	£10.95	£15.95
Pro Tennis Tour	£8.50	£13.95
Battle Of Bulge	£10.95	£11.95
Ancient Battles	£11.95	£11.95
Man United	£8.50	£11.95
Emlyn Hughes Socc	£8.50	£11.95
Int 3D tennis	£8.50	£11.95

BUS/UTILITIES	Disc
AMX Mouse & Art	£62.95
AMX Mouse & Stop Press	£71.95
AMX Stop Press	£39.95
AMX Extra Extra	£20.95
Proext (ROM + £8.00)	£21.95
Proext CPM + Version	£50.95
Prospell (ROM + £8.00)	£20.95
Promerge (ROM + £8.00)	£20.95
Maxam (ROM + £8.00)	£21.95
Utopia ROM	£24.95
Tasword 464D/6128	£24.95
Taspell	£15.95
Tasign 6128&PCW	£24.95
Tascopy	£11.95
Tasprint	£11.95
Tasdiary	£11.95
Microdesign	£20.95
Microdesign Extra	£10.95
Supercalc II 6128&PCW	£59.95
Advanced Art Studio	£19.95
Qualitas + **Vers II**	**£13.95**
Mastercalc 128	**£27.95**
Masterfile III	**£29.95**
Money Manager (+ PCW)	£24.95
Mini Office II	£15.95
Crash Course Typ Tut	£20.95
Crash Course Typ Tutor	£20.95
Two Fingers Conversion	£20.95
Qualitas + (New)	£13.95

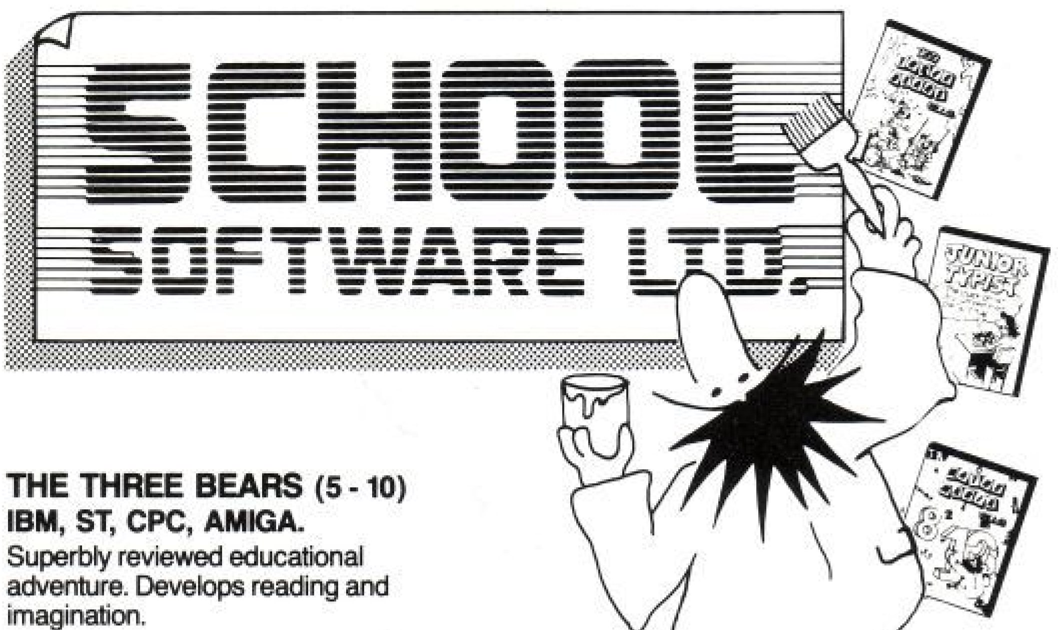
BUDGET	Cass
Quattro Power	£2.75
Quattro Adventure	£2.75
Thomas Tank Engine	£2.75
Macadum Bumper	£2.75
Fruit Machine II	£2.75
Vinidcator	£2.75
Chuckie Egg	£2.75
Chuckie Egg II	£2.75

ACCESSORIES	
Amstrad MP3 TV Tuner	£34.95
Multiface II +	£46.95
3.5" Drive Ramdos	£109.95
3.5" Dr Rodos/Romdos	£119.95
Ribbon Refresh	£7.95
AMX Mouse & Stop Press	£71.95
Star LC10 Inc cable	£179.95
LC10 Ribbons £3.75	2 £7.00
Rombo Rombox (8 Roms*	£31.95
KDS 8 Bit Printer Port	£18.95
Cass Head Alignment Kit	£7.50
6128 Keyboard Ext Lead	£7.95
464 Keyboard Ext Leads	£6.95
Amstrad MP2 Modulator	£28.95
Amstrad DDI Driv	£159.95
Citizen 1200 Printer	£149.95
FD1 2nd Drive (3")	£99.95
AMS30L Disc Box	£12.95
Monitor Stand	£15.95
464/664 64K Rampak	£44.95
Printer Cable 1mtr	£8.95
Ribbon DMP 2/2160/3160	£3.75
2 For .....£7.00 5 For	£16.25
Covers 464/6128 Col/M	£7.50
Cover DMP 2/2160	£4.50
Seal & Type 464/6128	£8.95
Amsoft/Maxell Disc	£2.65
5 For ....£12.50 10 For	£23.95
Mousemat	£4.95
Joystick Splitter	£7.95
Printer Cable 2mtr	£10.95
664/6128 Cass Lead	£3.50
Cassette Recorder	£18.95
Cassette recorder & Lead	£21.95

NEW GAMES ARE AVAILABLE ON DAY OF RELEASE: PLEASE PHONE FOR AVAILABILITY
Prices include Post & Packing in UK. Please send Cheques/PO's to:

O.J. SOFTWARE
273 MOSSY LEA ROAD, WRIGHTINGTON, WIGAN, LANCS WN6 9RN

MOST ORDERS ARE DESPATCHED BY RETURN
(OUT OF STOCK ITEMS USUALLY WITHIN ONE WEEK)
Write or phone (0257) 421915 for FREE LIST and LATEST RELEASES
OVERSEAS ORDERS: SOFTWARE ITEMS COSTING OVER £10 EACH POST FREE, OTHERS ADD £1.00 EACH
* SPECIAL OFFER ALL SOFTWARE ORDERS OVER £30 FREE CALCULATOR *
Order by Access or Visa 24 hrs Answerphone



THE THREE BEARS (5 - 10)
IBM, ST, CPC, AMIGA.
Superbly reviewed educational adventure. Develops reading and imagination.

BETTER SPELLING (8 - 18)
IBM, ST, PCW, AMIGA, CPC, BBC, CBM (D). Highly acclaimed tutor. Received excellent reviews. Challenging.

BETTER MATHS (12 - 16 GCSE)
IBM, PCW, ST, AMIGA, CPC, CBM (D). Very comprehensive coverage of all the major aspects of maths for this age group. Excellent.

BIOLOGY (12 - 16 GCSE)
IBM, PCW, CPC, CBM (D). Excellent interactive tutorials on all the important areas of biology.

CHEMISTRY (12 - 16 GCSE)
IBM, PCW, CPC, CBM (D). Ideal for home or school. Intensive tutor.

PHYSICS (12 - 16 GCSE)
IBM, PCW, CPC, CBM (D).
An outstanding example of what can be achieved by computer.

GEOGRAPHY QUIZ CPC, BBC, **CBM (D).** England, Scotland, Wales, Ireland. Superb program with excellent graphics.

THE BEST IN EDUCATION

HOW TO ORDER

1. Post your order.
2. Fax your order.
3. Ring credit card number.
4. Ring for advice.
5. Ask your dealer to order.

Prices:

CPC DISKS	£16.95
CASS	£10.95
P & P	£1.00

ORDER DIRECT TO:
School Software Ltd., Tait Business Centre, Dominic Street, Limerick, Ireland.
Tel: (U.K.) 010 353-61-45399.
Fax Orders: 010 353-61-44315.
Credit Card Hotline (U.K.): 010 353-61-45399.
Others Tel: 010 353-61-45399.
Access/Mastercard/Eurocard/Barclaycard/Visa No.

Expiry Date__________ Cheque/PO ☐

My machine __________

Titles __________

Name __________

Address __________

COMBAT ZONE

There you are – belated Combat Zone tribute to Britain's fave ninety year old royal – but that's enough of high art for this issue. On to the latest coin-op releases that are setting pulses racing in Arcade Land.

Many of you might have been waiting with vast anticipation for the newest Sega release, a new motorcycle racing game called Racing Hero. Chances are, however, you might be a little disappointed at the end of the day.

Now, it's not that Racing Hero is anyting other than yet another splendid piece of professionally put together arcade entertainment for the Sega stable. It's a distinct improvement from their last motor racing game (considered brill in its time) Super Hang-On, with all the fab sprite technology which had its last outing in super Monaco Grand Prix, fine graphics and an altogether playable style.

However, it turns out to be a conventional, 'behind the bike' view of the



action, racing game. Lean into a corner and your sprite-on-a-bike, nicely animated, leans too. Scenery stays straight and level. Cast your mind back to a couple of months ago when we reviewed a game from Taito, World Grand Prix – Real Race Feeling. This is a racing game with a difference. It brings the perspective to over the handlebars – and when you lean into a corner, the horizon and all the scenery tilts with you! Just like it does when you ride a real bike. This is only achieved, by the way, by a world allocation of silicon being inside the cabinet and some pretty nifty programming.

Having played this one – going back to ordinary bike racing games is really a bit dull. Even a fine effort like Racing Hero pales by comparison....so eventhough that one is the second best motorbike racing game around, WGP is so far ahead that – if you can get access to one – it's by far recommended above poor old Racing Hero. The good news is that Racing Hero is much more likely to make an appearance on the CPC!

I suppose you're getting a bit sick of vertically scrolling shooters, eh? You are? Well you are very much the exception then chum, because according to the trade, boards like Raiden – tedious to the extreme 'though they are – sell



like the proverbial thermally excited confectionary.

Yup, vertical scrollers, ever since Xevious, are the coronation Street of video games. And Raiden is the Len Fariclough of vertical scrollers. But if you're into that sort of thing, you might want to give it a go.

Competent graphics, obligatory power-ups and end of level nasty to zap, uninspiring if your after something different, although if you're just after a jolt of adrenalin, it works. What more can you say?

Now then, Data East – other than coming out with some neat pinball recently – has had the odd success or two in the coin-op department, Midnight Resistance going down particularly well with the punters. Now they're having a go with something called Dark Seal. The bad news is that it's a pseudo RPG jobbie played in isometric 3-D, just like Escape from the Planet of the Robot Monsters. Bad news because it's not very good.

The basic premise is fine – picking a character type out of the four on offer (Wizard, Warrior, Ninja, Bard) then



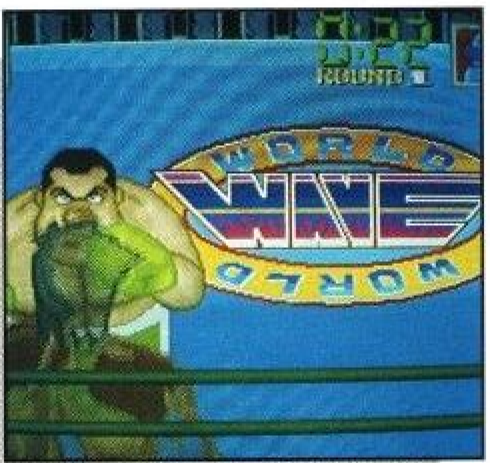
I wandered lonely as a cloud, as I stood on the burning deck, and then I saw these daffodils, and gave them to the Queen Mum for her Birthday.

you – or you plus a friend – travelling around zapping baddies, saving the pixie world from the bad guys. Trouble is, the gameplay is as uninspiring as the storyline.

This kind of stuff goes a bundle in Japan – in the more demanding (in its own way – European market, this is going to get the big thumbs down, despite an innovative magic system. Not at all compelling, avoid unless you are an RPG fanatic.

Capcom's Final Fight appears to be retaining a following long after release – shows that the beat-em-up genre has its die hard appeal, same as ever. Technos have delivered up the newest alternative called Combatribes. Done in very 'punky' graphics, there are certainly worse games about, but I found the style a bit wearing on the eye after a couple of goes. Nothing new here, I'm afraid.

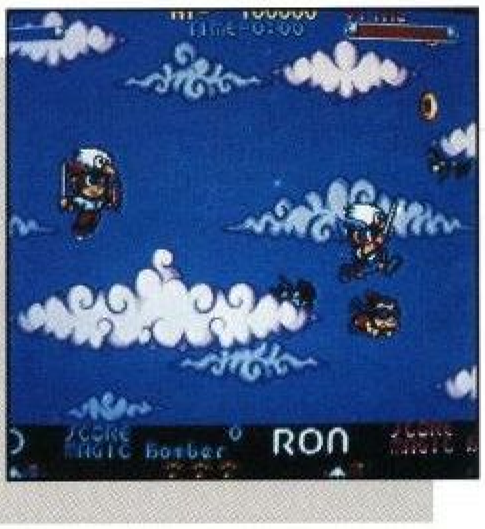
If you're tired of this street fighting stuff, 'though, you coud try Success

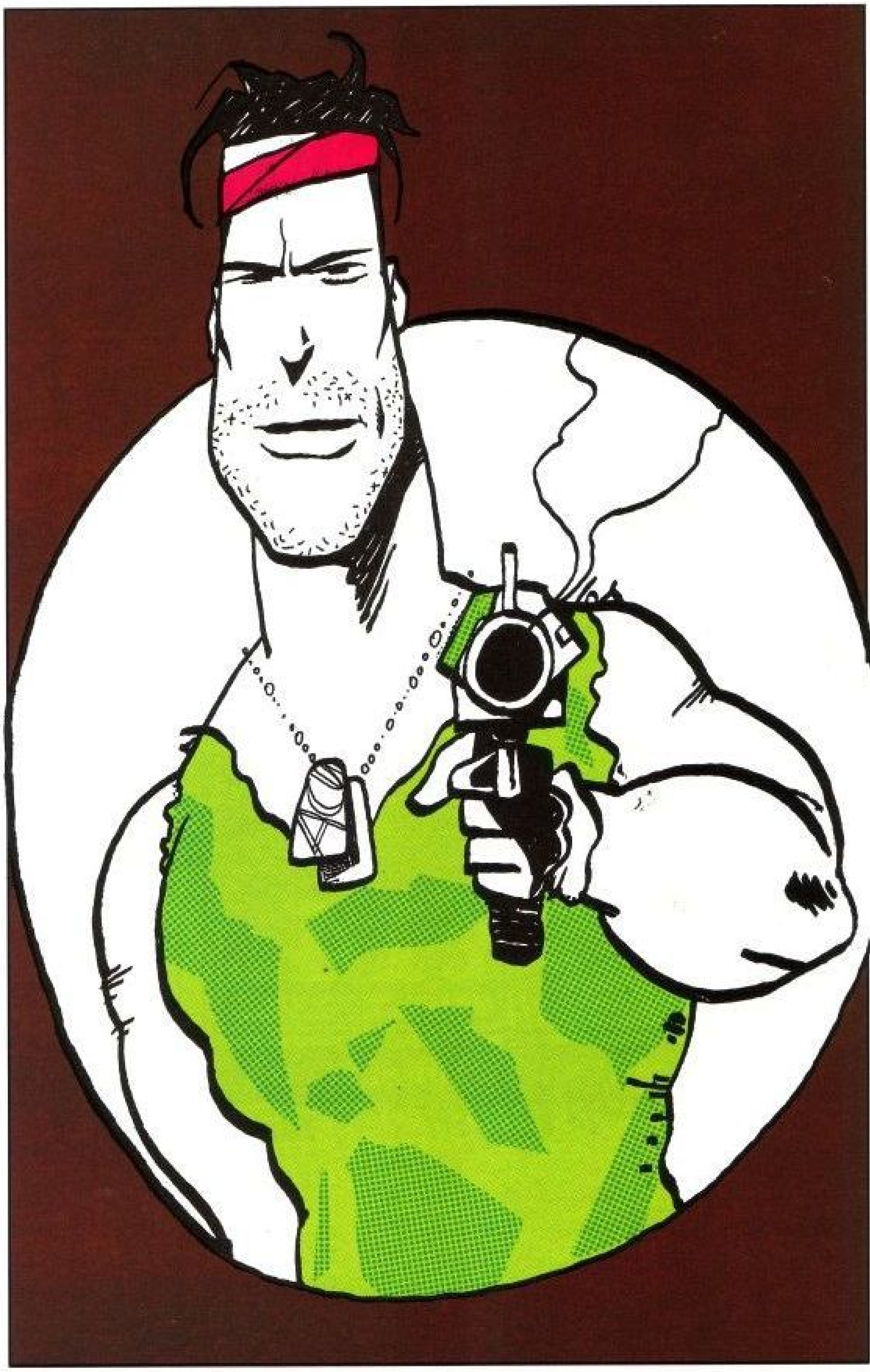


Joe, a real live boxing simulator. With a good user interface and some attractive intro graphics, this is going to be quite a success, I predict. Coming to a Jamma cabinet near you soon!

Finally this month, a game that has just got to be a hit, both on coin-op and on home format, if there's any justice.

Called Mega Twins, from Capcom, it's a cutesie jumpy-jumpy, shooty-shooty, which is both playable and fun.





Sure, it could be criticised as being a little formular – but these babies are the things that the Japanese do best. Lots of hidden tricks, weird graphics and monsters you'd rather pick up and cuddle than zap to bits (although you do anyway).Grab a mate and get on down to play this – you won't go far wrong.

Finally for this month – yet another opportunity to "have an arcade machine in your own home." (Part 25 of a series). Only this time, it's true! Industry veteran Robert Stallybrass of Active Sales has teamed up with Coin-op cabinet makers Silverline to bring you the Powercode – an industry standard upright arcade cabinet with a difference. No monitor!

You supply the monitor (or TV) and buy JAMMA arcade boards from Active, specially packaged for easy connection to your cabinet. And there you are, playing real live arcade games, identical to those in your local arcade.

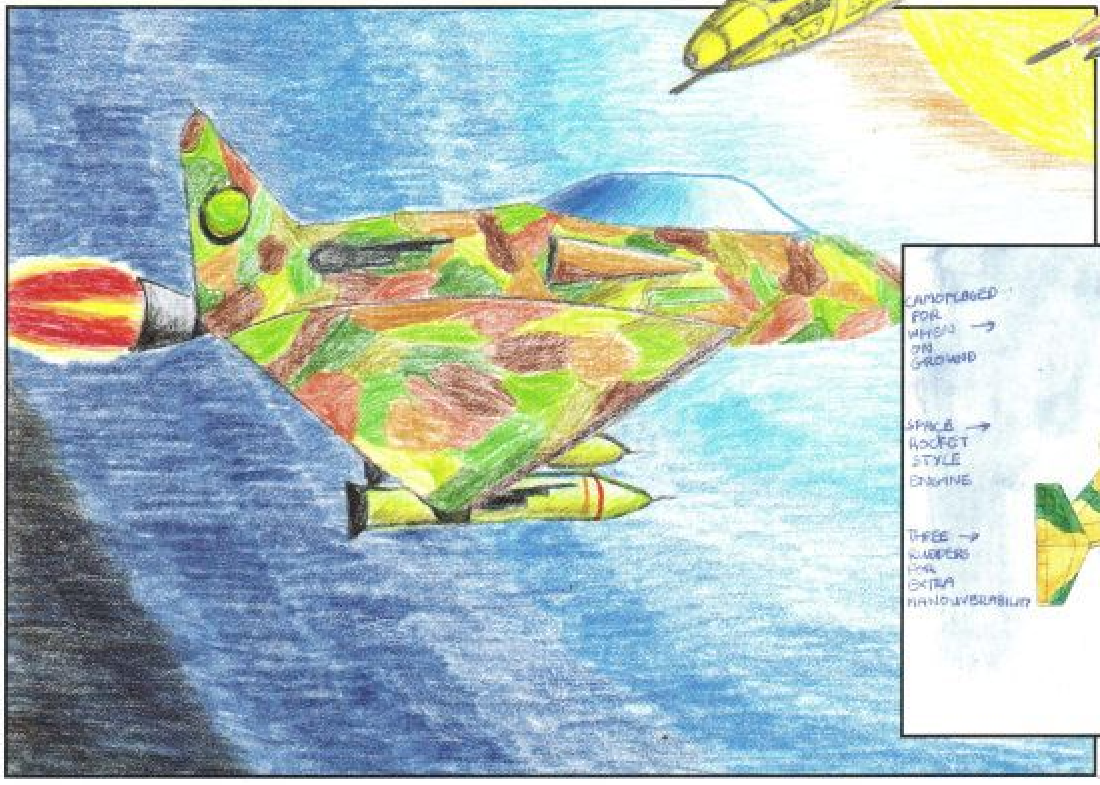
Problem is, the price. OK, so the unit itself is £299, including a free board. But new arcade games come at about £600 each – so you'll have to content yourself with playing the older games, that you'll be able to pick up for £50 to £100 each. Worth it if you're a fanatic. Available from the proverbial good software shops, you can bet that I'll be at the front of the queue! See you next month!

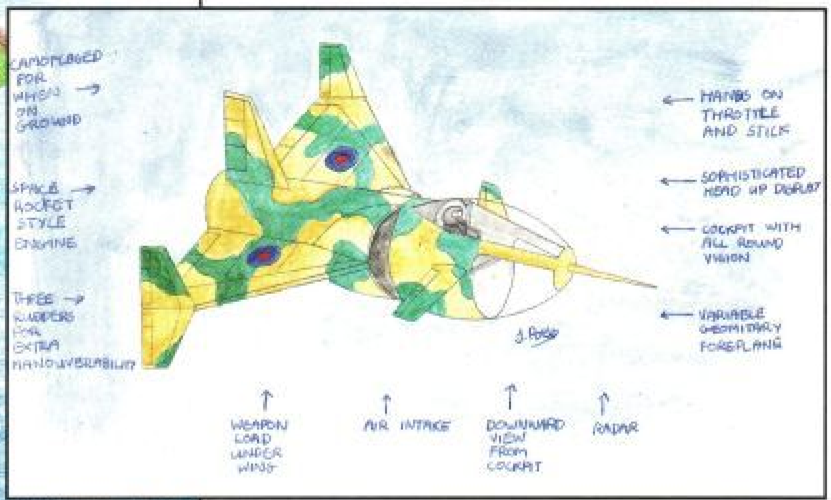
WINNERS



Time to give prizes away and this time it's the one you've all been waiting for with baited breath – the fantastic gliding course.

Well, we'll put you straight out of your misery by telling you that Christopher Dale of Sherfield English in Hants is the extremely lucky chappie





Supersonic

who'll be visiting the Booker Gliding Club in Marlow for the sensational first prize.

The three runners up, who will be getting groovy US Gold goodies are, Johnathan Poels of Malvern, Simon Cartwright of Worksop, even though he doesn't seem to realise that by bombing London there'd be no more ACU. Shock! Horror! and, finally, Peter Rowlands of Cross Lane, Head, Shropshire.

That's it unfortunately, although we'd love to be able to give away prizes to all of you who sent in such fabulous entries. Who knows, next time it could be your turn to win one of the super ACU prizes.



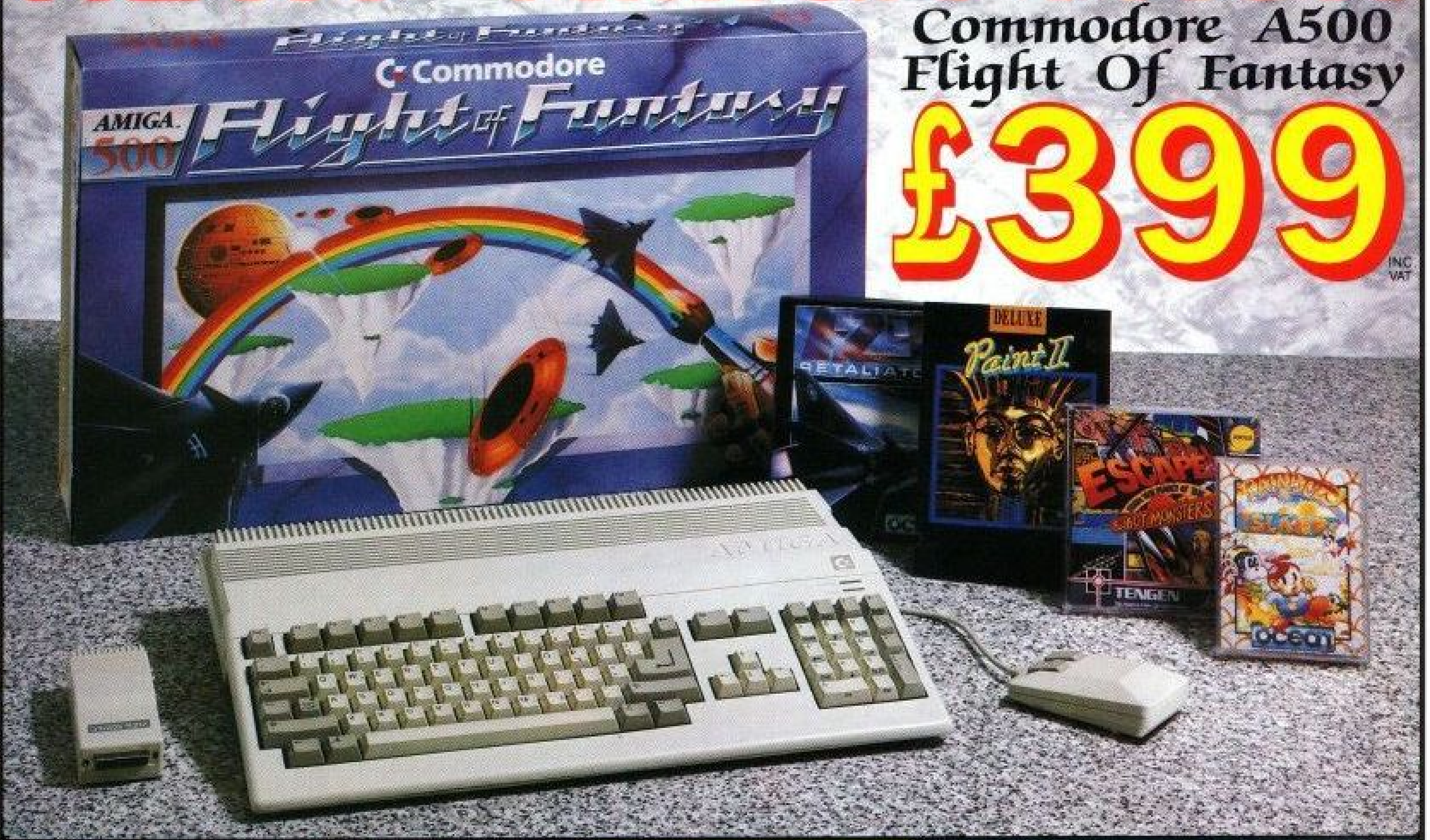
See page 20 for details of this month's fab ACU competition.

RETURN THE COUPON FOR FREE COLOUR BROCHURES!

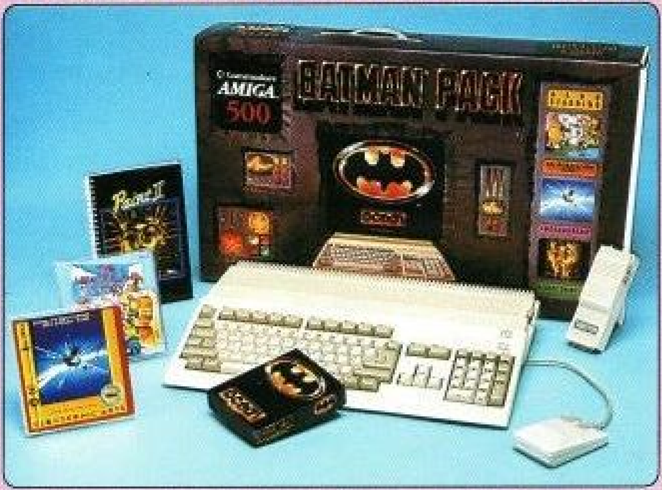
NEW! - AMIGA PACK

Commodore A500 Flight Of Fantasy

£399 INC VAT



A500 BATMAN PACK



The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: '**Batman The Movie**' - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95
TOTAL RRP:	£549.78
Less Pack Saving:	£150.78
PACK PRICE:	**£399.00**

£399 INC VAT

AMIGA 2000



For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

£1295 +VAT= £1489.25

FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

DELUXE PAINT II:

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

ESCAPE / ROBOT MONSTERS:

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

RAINBOW ISLANDS:

Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

F29 RETALIATOR:

The ultimate in flight simulation with a choice of two aircraft and four battle environments with dozens of different tactical missions. Aerial combat, strategic bombings, interactive ground based battles, seagoing carriers ... the list of features is endless. Real time cockpit displays, including 'true radar' enhance the realistic feel of this stunning simulation.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Deluxe Paint II	£49.95
Escape/Robot Monsters	£19.99
Rainbow Islands	£24.95
F29 Retaliator	£24.95
TOTAL RRP:	£544.82
Less Pack Saving:	£145.82
PACK PRICE:	**£399.00**

£399 INC VAT

FOR FURTHER DETAILS OF THE AMIGA RANGE, COMPLETE THE COUPON AND RETURN IT TO SILICA SHOP
THE UK's No1 AMIGA SPECIALISTS

SILICA SHOP OFFER YOU

FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
TECHNICAL SUPPORT HELPLINE: Team of Amiga technical experts at your service.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All of your Amiga requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: By cash, cheque and all major credit cards.
CREDIT PAYMENT TERMS: Silica are licensed credit brokers - return coupon for details.

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Shop, we ensure that you will have nothing to worry about. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Shop Service".

RETURN THE COUPON NOW FOR **FREE BROCHURES**

SILICA SHOP

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-309 1111**
Order Lines Open:	Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA		**Tel: 071-580 4000**
Opening Hours:	Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Fax No: 071-323 4737
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-302 8811**
Opening Hours:	Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017
BUSINESS/EDUCATION:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX		**Tel: 081-308 0888**
Order Lines Open:	Mon-Fri 9.00am-6.00pm	Closed on Saturdays	Fax No: 081-308 0608

To: Silica Shop, Dept AMSCU 1190-32, 1-4 The Mews, Hatherley Rd., Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON THE AMIGA

Mr/Mrs/Ms: .... Initials: .... Surname: ....

Address: ....

....

....

Postcode: .... Tel: ....

Which computer(s), if any, do you own? .... A2000 ☐

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.



Hackers Revenge

Not even a vicious hairy sausage attack can keep Vax down. Read on...

Welcome once more, hackfans, to this meagre column. A very fast column too today, due to food poisoning preventing me from staying at the keyboard too long. Yes folks, I have been stricken by The Revenge of the Mutant Salami; a sell-by sausage with a growth so luxuriant, it was classified as a site of special scientific interest. Still, the show must go on or I'll never empty the mailbag..

A very nice letter we have too, from a Milton Keyneite by the name of Anthony Jones. He's hacked several games with a combination of Multiface and Insider.

Hacker is the first game he mentions, which he has extracted the passwords from. The first one you want is AUSTRALIA, which should last you to the security checks. These require the following answers:

1. MAGMA, LTD.
2. AXD-0310479
3. HYDRAULIC
4. AUSTRALIA

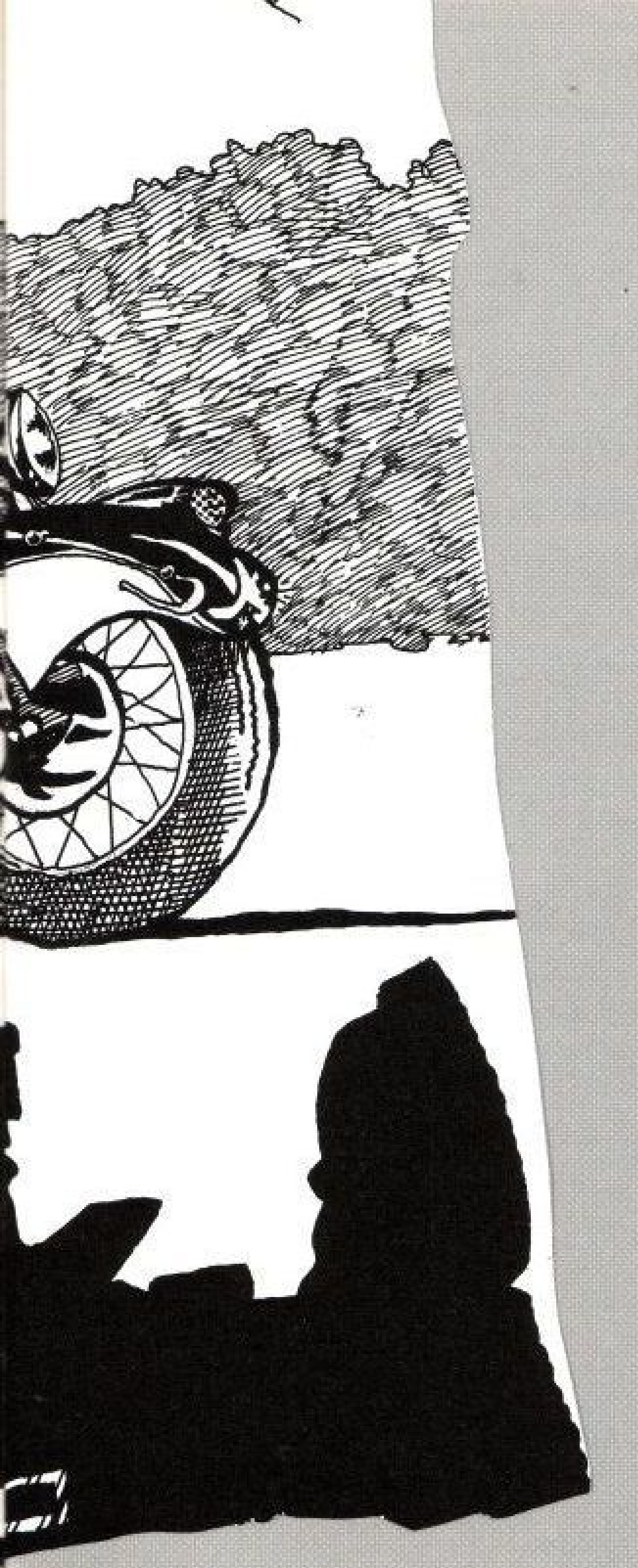
There, and if I typed any of that wrong, I'm going to look a right idiot, aren't I?

Ghost Hunters isn't a game I've played, but Tony says that pressing DEL pauses the game, and typing COMPLEX tops up your energy. It also lets you select any screen you feel like by pressing A-Z and ENTER.

Now Ghostbusters is one I've tinkered with from time to time, and so has Tony. His account number of 11637466 gives $362700 in your account. If I'm on holiday in the Bahamas next month, you know it works on Abbey National hole-in-the-wall machines too.

Tony has ravaged savage too, and the passwords for that one are SABATTA for part 2, and FERGUS for level 3.

Do you want a silly one for Solomon's Key? Well I don't, so you can have it: Enter your name in the high score table, wait for the demo to start, hit ESC twice, and enter your name



again. I told you it was silly.

We've dealt with Spindizzy before, but that was a while ago now, and some of you have probably bought it since then only to find that your ACU collection has been turned in to hamster bedding by your sister. Life is tough.

Relief is at hand. Merely place said hand on the F and X keys simultaneously, and at the same time. Lo, there is a strange proggy concealed within called Stix, much more familiar to Atari users as a game in its own right (or so I'm told; me no Atari). Just for kicks (kix?) you might try controlling the thing with a joystick or keyboard, but the only keys that have much effect are: Space stops it, CLR clears the screen, and T turns the trail on and off.

Sorcery and Sorcery + are so old that they seemed new when I played them recently. Couldn't even remember what killed the ghosts, but I got there in the end. If you get a high score (especially in Sorcery +) you may discover that some names change when you type them in. Roback changes to Growbag, for instance (Peter Roback bought Sorcery + for Amstrad) and I'll let you discover what Hugh turns into. Got to keep you in suspense somehow, haven't I?

Tony's assault on Saboteur II reveals the following codes for the different missions. I think there is a common link between them all:

Mission 1 Just hit enter
Mission 2 JONIN
Mission 3 KIME
Mission 4 KUJI KIRI
Mission 5 SAIMENJITSU
Mission 6 GENIN
Mission 7 MI LU KATA
Mission 8 DIM MAK
Mission 9 SATORI

And the link is: The names all sound like aftershave lotions (yes Tony, I'm quite mad pineapple).

Finally, Tony has a few Multiface pokes as yet unpublished. Look carefully on this page, and you'll spot them under the heading "Multiface Pokes."

Multiface Pokes

GAME	EFFECT	Addr	POKE
Subterranian Stryker	Inf. lives	7D36	A7
Bigfoot	Inf. lives	1016	A7
Ghouls	Inf. lives	18C4	00
Ikari Warriors	65 lives	5CEB	41
Savage part 1	255 lives	033C	FF
Savage part 2	256 lives	2611	00
Savage part 3	256 lives	0CB3	00
Solomon's Key	128 lives	0760	80
Wriggler	256 lives	8018	00
Start Wars	Inf. shields	44C1	00

The Savage poke is a bit dodgy, because Savage in general is fussy about Multifaces. Just try it a few times.

The wriggler poke is for the Computer Hits 3 version, but might work on others; no time to test at this end as the deadline is gaining on me again.

To round the column off nicely this month, we'll have two of many goodies sent in by Graham Smith from Brookside. There'll be oodles of his stuff next month, but I can just squeeze these two in today. Elven Warrior and Saigon Combat Unit tape pokes. They're checksummed in case of pinky failure, and here they are:

```
1 ' Elven Warrior -tape-
2 ' By Graham Smith
3 ' Infinite health,keys
4 ' & ammo
5 '
10 DATA c4,14,ac,af,32,5b
20 DATA 13,32,df,18,32,26
30 DATA 1b,fb,c9,3e,8f,32
40 DATA 7f,41,3e,b3,32,cc
50 DATA 41,21,62,46,36,92
60 DATA 2b,36,83,2b,36,df
70 DATA c3,05,40
80 FOR j=0 TO 38:READ a$
90 x=VAL("&"+a$):y=y+x
100 POKE j+48640,x:NEXT j
110 IF y<>3807 GOTO 140
120 MEMORY &3FFF:LOAD"
130 CALL 48655
140 PRINT"data error
```

```
1 ' Saigon Combat Unit
2 ' By Graham Smith
3 ' Infinite lives,
4 ' ammo & bombs
5 '
10 DATA c4,14,ac,3a,16,71
20 DATA fe,02,20,0c,af,32
30 DATA fe,a3,32,12,a4,32
40 DATA 98,a3,fb,c9,af,32
50 DATA 2d,a5,32,41,a5,32
60 DATA c7,a4,fb,c9,3e,8f
70 DATA 32,7f,41,3e,b3,32
80 DATA cc,41,21,5e,46,36
90 DATA f2,2b,36,db,2b,36
100 DATA 0f,c3,05,40
110 FOR j=0 TO 57:READ a$
120 x=VAL("&"+a$):y=y+x
130 POKE j+48640,x:NEXT j
140 IF y<>6344 GOTO 170
150 MEMORY &3FFF:LOAD"
160 CALL 48674
170 PRINT"data error
```

Oh well, that's it for another month. Keep the letters coming, and wake me up when it's time for the next Hackerzzzzzz....

Luv 'n' stuff,
Vax, Suz & Co.

SUBSCRIBE TODAY!



AND RECEIVE 2 EXTRA ISSUES OF ACU ABSOLUTELY FREE!

Convenience

Direct to your door at NO EXTRA COST* – we pay the post!

To Avoid Disappointment

Never again worry about your local newsagent selling out.

And Save Money

Avoid any price increases for the next 14 issues by subscribing today.

Take advantage of this offer today, simply fill in the coupon below and send it with your remittance to:

M.S.M. Subs Dept, Lazahold Ltd, P.O. Box 10, Roper Street, Pallion Ind. Estate, Sunderland SR4 6SN.

The first issue of a new subscription to be delivered will be one or two issues after the one you placed your order in.

*Overseas prices include postage.

Please send me one year's subscription to **ACU** (14 for price of 12)

I enclose my cheque/money order for £ . . . . made payable to **MCPC LTD** or debit my Access/Visa card.

No ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ **Expiry Date** ☐☐☐☐☐☐

Name ....

Address ....

....

Postcode ____________ **(Please enter postcode to ensure prompt delivery)**

Signed .... **Date** ....

Offer closes 5th October 1990 **ACU 1190**

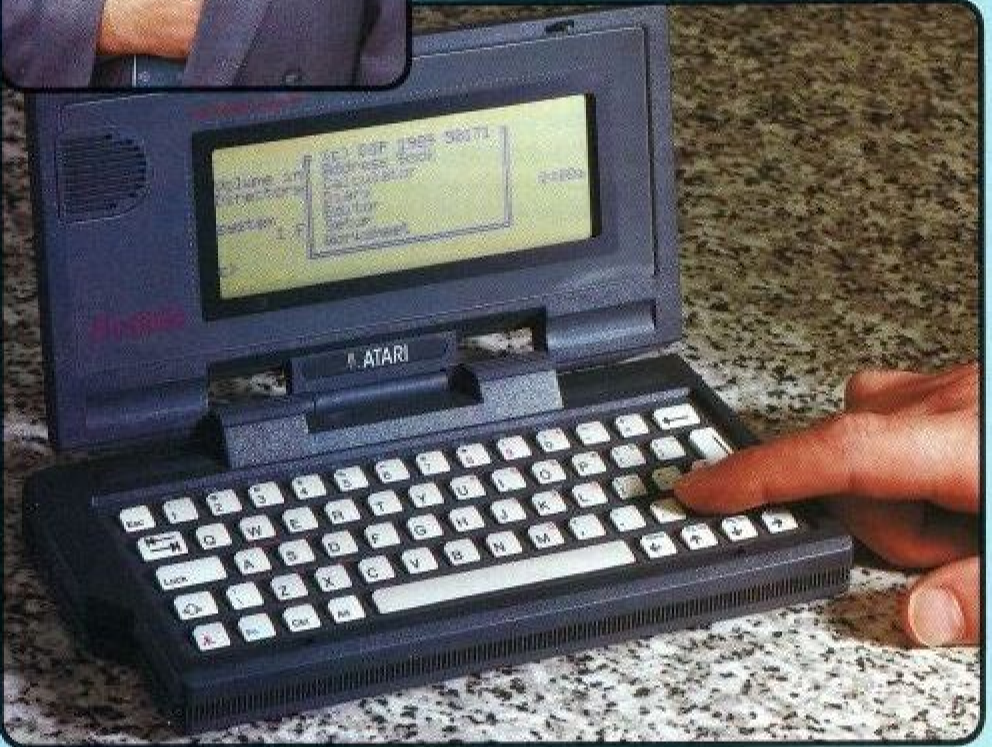
UK: £17.40; EUROPE: £24.20; MIDDLE EAST: £24.50; FAR EAST: £27.10; REST OF WORLD: £25.00; OR USA: $44.00

Airmail rates available on request

★ POCKET SIZED ★ PC-COMPATIBLE ★ PERSONAL ORGANISER ★



ATARI Portfolio



THE PC IN YOUR POCKET

The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80×25 character display.

Portfolio includes everything you would expect from an electronic organiser - an address and telephone book, time manager, diary and sophisticated calculator.

Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

FOR ONLY £199 INC VAT

SPECIFICATION

- ★ ***Processor:*** Intel 80C88 at 4.9152Mhz.
- ★ ***Operating System:*** Compatible with MS-DOS 2.11.
- ★ ***Internal ROM:*** 256K containing BIOS, operating system and applications suite.
- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ ***Keyboard:*** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ ***Size:*** 8" x 4" x 1" (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

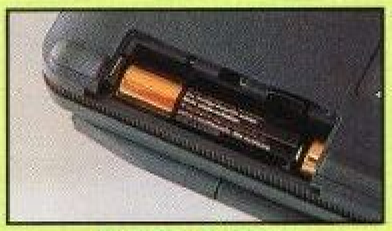
SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.



MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.



INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

SILICA SYSTEMS OFFER YOU

FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
TECHNICAL SUPPORT HELPLINE: Team of Atari technical experts at your service.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All of your Atari PC requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: By cash, cheque and all major credit cards.
CREDIT PAYMENT TERMS: Silica are licensed credit brokers - details on request.

Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Order Lines Open: Mon-Sat 9.00am-6.00pm · No Late Night Opening	**Tel: 081-309 1111** Fax No: 081-308 0608
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA	Opening Hours: Mon-Sat 9.30am-6.00pm · Late Night: Thursday until 8pm	**Tel: 071-580 4000** Fax No: 071-323 4737
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Opening Hours: Mon-Sat 9.00am-5.30pm · Late Night: Friday until 7pm	**Tel: 081-302 8811** Fax No: 081-309 0017
BUSINESS/EDUCATION: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Order Lines Open: Mon-Fri 9.00am-6.00pm · Closed on Saturdays	**Tel: 081-308 0888** Fax No: 081-308 0608

To: Silica Systems, Dept AMSCU 1190-38, 1-4 The Mews, Hatherley Rd., Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON PORTFOLIO

Mr/Mrs/Ms: .... Initials: .... Surname: ....

Address: ....

....

.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Company Name: ....

Which computer(s), if any, do you own? ....

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

Down in the Dumps

Seven Stars, producer of the Miraprint font utility, has addressed the problem of producing high quality screen representations of screen files and produced Miracopy, a screen dump utility tailored to 24-pin printers.

Miracopy is capable of producing 16 grey shades from standard colour screen files e.g. (TEST.SCN). Mode 0,1,2 screens can be printed in small (55x90mm) and medium (110x1800mm) screen dump sizes. Mode 0 screens also can be printed in large (270x170mm) size. The large size fits neatly onto an A4 sheet filling most of it. For high quality dumps 2 or 4 pins modes are available with a 24-pin mode for fast proofing.

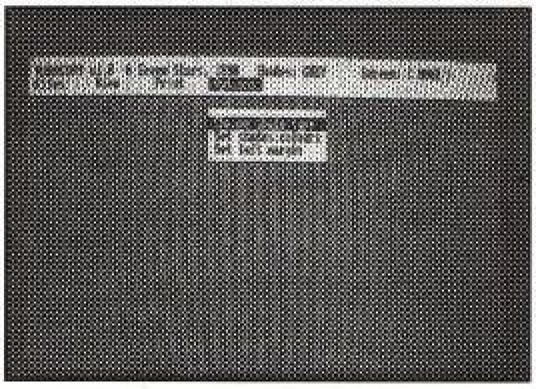
Two sets of gray shades, patterned and gray, are available to increase the output options and enhance plain screens or lettering.

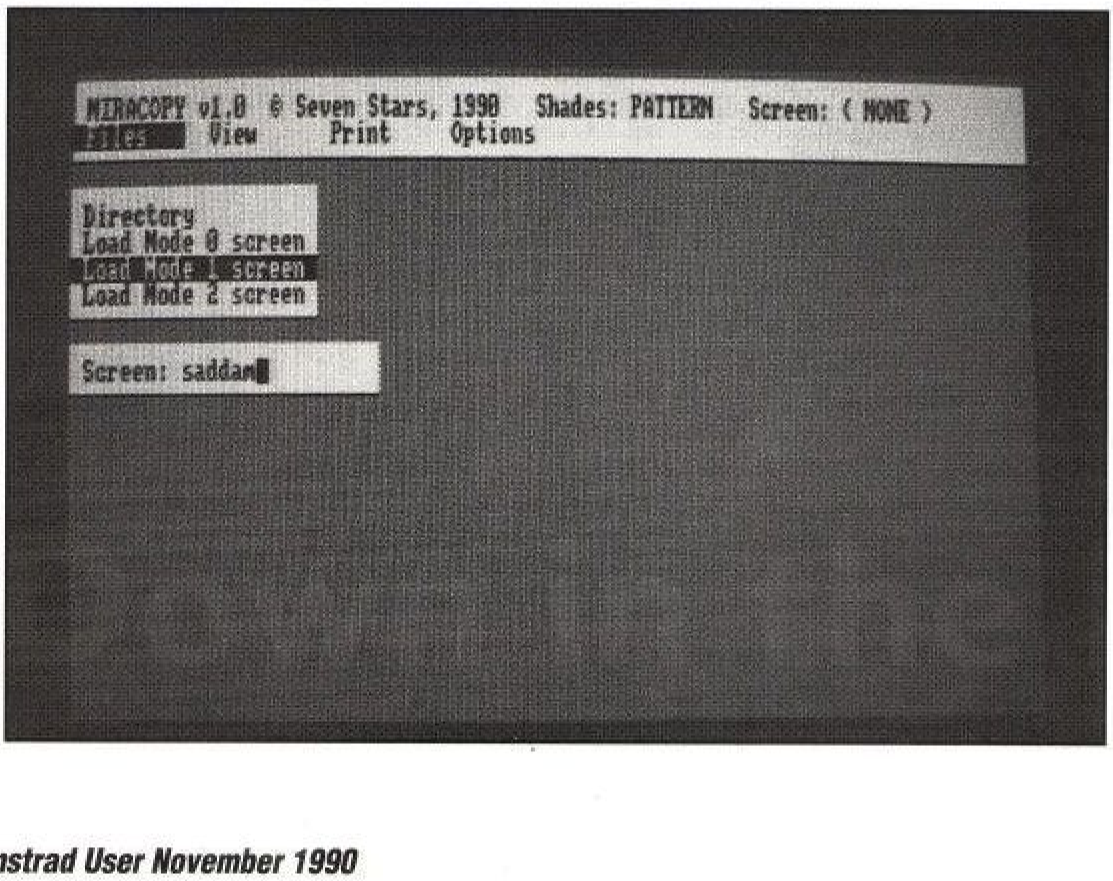
Positioning of copy is attached by adjusting the left margin via menu-driven option.

Operation

Miracopy is easy to load and operate. It is a straightforward application program for which you will either have a use for and cannot live without or will never need. If you are in the first category then you need look no further as this application is clear, concise and easy to use. All options are available from one opening screen, which is simple and uncluttered. The opening screen presents you with a status line that informs you of the current file loaded for printing, if any, and the method of shade in use (pattern or grey). The second line is the heading line for the drop-down menus, which seem to be well idiot-proofed.

The sub-menus prompt for further information using the standard dialogue box approach and you can return to a submenu if you find yourself in the wrong one by using the ESC key.





Loading screens

Available screen files can be displayed by selecting Directory from the files menu. They can be loaded by selecting the appropriate screen mode option and then filling in the name of the file. You can also add a drive prefix to the file name if needed.

Previewing screens

Screens to be printed can be viewed by selecting the view menu from the main screen. The colours shown will be assigned shades of grey and different shades can be assigned to different colours. Any key gets you out of the view screen.

Printing screens

To print a screen file it is possible to select print from the main menu. Then pick the dump size and screen mode. Printing can be interrupted at any time by pressing any key. Options 2 and 4-pin printing are available when in this mode. A nice touch is that the pins used are randomized in order to minimize pin and ribbon wear.

Conclusion

Miracopy is an excellent printing utility, which is very workmanlike with no frills. It does the job. If you are looking for a 24-pin printer with print dump facilities, then I recommend you take a look at Miracopy.

Product:
Miracopy
Price: £16.99
Available from: Seven Stars

Exclusive! Multiface 2 espionage shock!

ROMANTIC ROBOT IN A SPY SCANDAL

By our own intelligent correspondent

A Third World diplomat was expelled from Britain last week for engaging in industrial espionage on behalf of an unnamed East European country, Foreign Office officials confirmed in London early this morning.

The diplomat was caught red-handed, using a unique computer add-on, known in the business as **MULTIFACE 2**. The device is used to **freeze, inspect and back-up** running CPC programs, sources familiar with the case said.

Magic button

Although seemingly just a small black box, it is apparently full of hi-tech wizzardry and even sports a so called **MAGIC BUTTON**.

Some sources suggested **MULTIFACE** could have been embargoed from exports to any non-NATO country, but Cocom officials could neither confirm nor deny the instrument had been included on the **list of banned equipment**.

Cocom is a Paris based inter-governmental agency set up to monitor trade in **strategic goods** and create lists of such equipment whose **sale to potential enemy countries is prohibited.**

The unorthodox use of **MULTIFACE** by the diplomat, whose identity and country of origin remain hidden for fear of reprisals against British nationals, had been detected when a nurse in the envoy's Kensington Gardens estate reported a change in the man's habits to her Foreign Office contact.

"He visited a computer outfit, called **ROMANTIC ROBOT**, came back with a black box and has been spending every free minute in his den ever since," the 30-year-old woman, whose identity is protected under the Official Secrets Act, said.

"I've even heard him screaming '**Multiface, oh, Multiface**' in his sleep," the nurse added.

Contacted in his office at **ROMANTIC ROBOT**, a company spokesman said the question had put him on the spot.



"There's a saying one oughtn't believe any rumours until they have been officially denied, so I can neither confirm nor deny your story. I personally think it is utterly preposterous, but it's up to you to decide," the spokesman said.

He said he would rather not comment on reasons for the diplomat's strange behaviour.

"He seemed perfectly normal. He was, obviously, **very keen** to get the **MULTIFACE**, in fact he also bought the **Insider** disassembler and **RODOS** System, which we have on special offer of £9.95 and £19.95 respectively. But nobody at Romantic Robot has ever detected anything out of the ordinary in the envoy's manners."

"Your readers might find it interesting to **try Multiface themselves**," the spokesman said. "I hope their reaction would be just as ecstatic. Obviously they should excersise some degree of self-control - in their own interest!"

Not an advert

"Of course, I'd rather not if this were to sound as an advertisement but I am given to understand **MI5** are considering seeking an injunction on the sales of our device, so it might be wise to **send for a Multiface now,** before they find a co-operative judge. At **£37.95** (£10 below RRP) plus £1 p&p it is a real bargain - some may say it is even **more than one bargained for."**

Foreign Office officials declined to comment, saying they would not debate cases where a judicial decision might be pending.

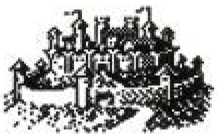
The Romantic Robot spokesman said his company could not accept responsibility for any mishaps occurring to anyone visiting its premises at 54 Deanscroft Ave, London NW9 8EN.

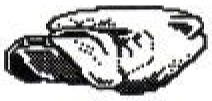
"We seem to be getting most orders through the post, anyway," he added.

He said also those who'd rather use their **ACCESS/VISA** cards and order by telephone, at **081 200-8870**, should be extremely cautious in their choice of words.

"You never know who's listening in," he observed.

GRAPHICS GALORE





A CLIP-ART COLLECTION FOR ALL AMSTRAD CPC MACHINES





OVER 2000 PIECES OF SUPERB CLIP-ART IN 37 LIBRARIES (56 PIECES IN EACH LIBRARY)

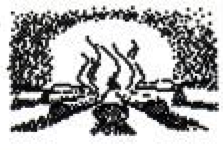
*** And we are working on further libraries ***





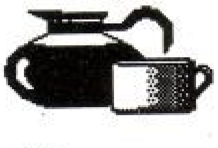
OUR COLLECTION OF CLIP-ART IS SUITABLE FOR IMPORT INTO ALL DESKTOP PUBLISHING PROGRAMS & ART PACKAGES USING STANDARD AMSTRAD 17K SCREENS AMX STOP PRESS - PAGE PUBLISHER - CHERRY PRINT - MICRO DESIGN - ADVANCED ART STUDIO - SCREEN DESIGNER ETC. ETC.





ONLY A SMALL SELECTION OF CLIP-ART IS SHOWN HERE.
A FULL 20 PAGE CATALOGUE IS AVAILABLE FOR A SMALL CHARGE

UK - 1.25 EUROPE - 2.75 REMAINDER - 3.75





THE COSTS PER LIBRARY (including p and p) ARE AS FOLLOWS

UK - 12.00 EUROPE - 13.50 REMAINDER - 14.50





If, at the time of purchasing your first Clip-Art disc, you wish to order additional libraries the charge for each one will be 10.00. These extra libraries will be added to your disc up to a minimum of 12 libraries per disc.

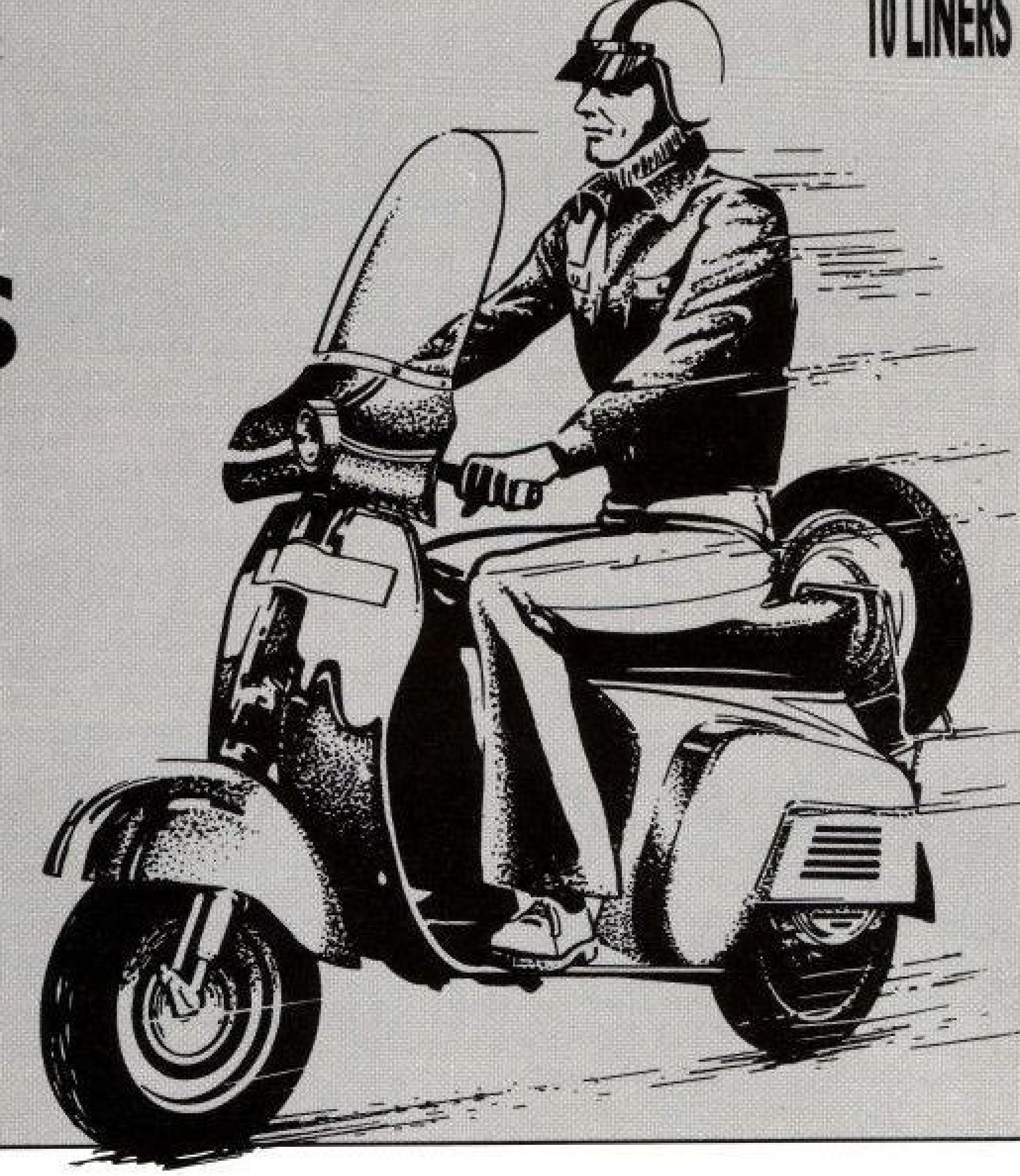




Payment, in Sterling, should accompany your order to:

GOLDMARK SYSTEMS
51 COMET ROAD, HATFIELD, HERTFORDSHIRE, AL10 0SY
TELEPHONE (0707) 271529 till 10PM

DEMON DRIVERS



BY DAVID HALL

It's Tron racing time again. I know we've had something similar before, but this incredibly stylish version from David Hall will be hard to better. As a two player game, using the joystick and control keys to move the race lines, try and force your opponent to crash first over nine gruelling rounds.

```
10 CLS:PRINT "+ WAIT +":1=20000:FOR m=1 TO 18:READ a$:FOR t=1 TO LEN(a$) STEP 2:P
OKE 1,VAL("&"+MID$(a$,t,2)):1=1+1:NEXT:NEXT:MODE 0:PAPER 0:BORDER 0:CLS:x=28:y=7
2:a=312:b=586:c=4:d=4:GOSUB 100:x=14:y=4:a=36:b=200:c=12:d=9:GOSUB 100 [5E]
:x=428:c=11:d=3:GOSUB 100 [5E]
20 INK 5,15:INK 14,13,26:LOCATE 5,22:PEN 15:PRINT "Press <FIRE>":CALL 20000:PEN
14:LOCATE 5,12:PRINT CHR$(22)CHR$(1)a$(PEEK(19000))" has won!"CHR$(22)CHR$(0):FO
R t=1 TO 20:SOUND 1,t,6,15:FOR k=1 TO 40:NEXT:NEXT:INK 15,0,11:WHILE I [5B]
NKEY(76):WEND:GOTO 20 [5B]
30 DATA CD344FCDEE4ECDC14E3E0F010007CD32BCCDB64ECD074F3E4CCD1EBB28F33E0F010000CD
32BC3E0132E1473C32E247215AC3227E472134C3227C47CDC14ECD4F50CDC84FCD074F215A50CDAA
BC216350CDAABCCD674F3AE047FE002805CD624F1810CDE54FCDB64E3AE047FE0028D5 [E6]
CD5C4FCDA7BC216C50CDAABC [E6]
40 DATA 3A5446FE3920063E0132384AC93A5546FE39C2294E3E0232384AC90E7806280010FD0D20
F8C92154C0060722524600E09C5225046117950CDF44E2A5046110800019C10D20EB2A52460E16CD26
BC0D20FA10D9C92A75501129510E16E506081A77231310FAE1CD26BC0D20F0C92A7550 [B4]
3A7750FE01280B2B7EFE0020 [B4]
50 DATA 1422755018D2110800197EFE0020062A75502318EC3A7750EE03327750C9213030225446
3E01CD90BB211804CD75BB3A5446CD5ABB3E03CD90BB211811CD75BB3A5546C35ABB21544634180D8
21554618F8AF32E047CD24BBCB472026CB4F2015CB57202BCB5F202F3AE147FE012828 [28]
FE03381C280D2A7C47CD26BC [28]
60 DATA CD26BC3E04181B2A7C47CD29BCCD29BC3E03180E2A7C472B3E0218062A7C47233E01227C
4732E147CDD34FFE01C8CD26BCCDD34FFE01C82A7C473633CD26BC3633C97EFE302807FE332803FE
CCC03E0132E047C9AF32E0473E0BCD1EBB202F3E0ECD1EBB201B3E14CD1EBB202E3E04 [AD]
CD1EBB202F3AE247FE012828 [AD]
70 DATA FE03381C280D2A7E47CD26BCCD26BC3E04181B2A7E47CD29BCCD29BC3E03180E2A7E472B
3E0218062A7E47233E01227E4732E247CDD34FFE01C8CD26BCCDD34FFE01C82A7E4736CCCD26BC36
CCC901000000004000C05000200000A04000C050002000000001E0F780004D701000F0F [40]
0F1E0D0F0F0F0F0F0F1E0D0F [40]
80 DATA 0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F1A0F1E0D1A0F0F0F0F051E0D0F050F0F0F
0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F3C3C3C3C1C3C3C3C0C0C
0C0C0C0C0C0C0C0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D [D1]
0F0F0F0F1A0F1E0D1A0F0F0F [D1]
90 DATA 0F051E0D0F050F0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D0F0F0F0F0F0F1E0D
0F0F0F00000000000300000000000000003000000000000001000200000000000010002000000000000020
00100000000000020001000000000000020001000300000100000000300020001000000000 [BD]
0020001000000000000100020 [BD]
100 INK 0,0:INK 15,0:PLOT x,y:FOR t=1 TO 2:DRAWR 0,a,c:DRAWR b,0:DRAWR 0,-a,d:DR
AWR -b,0:MOVER -4,2:NEXT:a$(1)="ToM":a$(2)="JerrY":PEN 12:LOCATE 3,23:PRINT a$(1
):PEN 11:LOCATE 15,23:PRINT a$(2):RETURN:DATA 000000000010002000000000 [1B]
000030000000000000000030 [1B]
```

3D SHADOWS

BY J. ARROWSMITH

Here's a very simple graphics demo, showing you the ease with which you can obtain 3D lettering effects. Run it, play around with it and see what you can come up with.

```
10 x=100:y=202:INK 6,6:INK 0,2:PAPER 0:INK 1,26:INK 2,6:INK 7,6
20 a$="S H A D O W S":b$=STRING$(LEN(a$),143)
30 MODE 0:PRINT CHR$(23)CHR$(1):TAG
40 PLOT 0,0,3:MOVE 0,0:MOVE x-5,y-5:PRINT a$;
50 PLOT 0,0,5:MOVE 0,0:MOVE x,y:PRINT a$;
60 PLOT 0,0,3:MOVE 0,0:MOVE x-5,y-25:PRINT b$;
70 PLOT 0,0,5:MOVE 0,0:MOVE x,y-18:PRINT b$;
80 TAGOFF:PEN 1:LOCATE 4,21:PRINT"PRESS ANY KEY":TAG:PLOT 0,0,4:MOVE 0,0
90 CALL &BB18:y=200:FOR x=1 TO 522 STEP 2:MOVE x,y:PRINT CHR$(143);:CALL &BD18:
NEXT
100 TAGOFF:PRINT CHR$(23)CHR$(0)
```

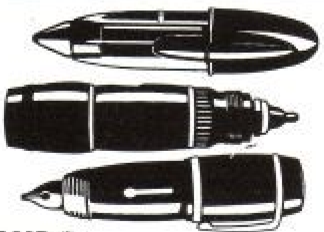
COLOUR SCRIBBLE



BY GARETH BOWNES

Run the proggie and keep pressing the letter p for some excellent random scribbles and enough colours to send your brain reeling. It's called colour scribble and you certainly gets what you pays for.

```
 COLOUR SCRIBBLE  By Gareth Bownes 1990
10 REM"***COLOUR SCRIBBLE By Gareth Bownes ***"
20 MODE 1:BORDER 5:INK 0,5
30 INK 1,12:PRINT:PRINT"          COLOUR SCRIBBLE"
40 FOR a=1 TO 10:NEXT
50 c=d:a=INT(RND*30):BORDER a:b=INT(RND*30):INK 0,b
60 n=INT(RND*15):FOR n=0 TO 15:INK 1,n:DRAW RND*320+INT(RND*
190)*COS(a),RND*200+INT(RND*190):NEXT n
70 PEN 2:LOCATE 17,20:PRINT"PRESS p":WHILE INKEY$<>"p":WEND
80 CLS:GOTO 20
```



PRINTER CONTROL

BY DANIEL GRIFFIN

Here's an excellent utility which gives you three extra commands to the existing BASIC keywords, enabling you to print text to the printer using shorter commands than the default PRINT #8,"text" system.

The first is PRNT,"text", using the <CR><LF> code to start new lines. Take note that this is only for text, not graphics, when you could use PRNT,STR$ (1+1), which will print 2.

LF will perform a <CR><LF> on the printer to start a new line, and CHK,@p% checks if your printer is on-line or not.

Handy eh? One more note; 464 users should enter in different commands due to the way in which the 464 handles RSX's,eg:

CPC6128 & 664 – PRNT,"HELLO"
CPC464 – a$="HELLO": PRNT,@a$

```
1 ' Printer Control RSXs - |PRNT , |LF , |CHK - (c) D. Griffin 1990
10 SYMBOL AFTER 256:MEMORY &9C39:SYMBOL AFTER 240
20 FOR A=&9C40 TO &9D36:READ A$:POKE A,VAL("&"+A$):NEXT:CALL &9C40
30 DATA 3E,04,CD,5A,BB,3E,02,CD,5A,BB,01,EA,9C,0A,FE,FF,28,06,CD,5A,BB,03,18,F5,
01,62,9C,21,6D,9C,CD,D1,BC,C9,71,9C,C3
40 DATA 7B,9C,C3,AA,9C,C3,BF,9C,00,00,00,00,50,52,4E,D4,4C,C6,43,48,CB,00,FE,01,
20,65,DD,6E,00,DD,66,01,46,78,FE,00,28
50 DATA 59,23,5E,23,56,1A,CD,D9,9C,CD,31,BD,13,10,F6,3E,0D,CD,D9,9C,CD,31,BD,3E,
0A,CD,D9,9C,CD,31,BD,C9,FE,00,20,36,3E
60 DATA 0D,CD,D9,9C,CD,31,BD,3E,0A,CD,D9,9C,CD,31,BD,C9,FE,01,20,21,DD,6E,00,DD,
66,01,3E,F5,DB,00,E6,40,FE,00,28,03,36
70 DATA 00,C9,36,01,C9,F5,3E,F5,DB,00,E6,40,20,F8,F1,C9,3E,07,CD,5A,BB,C9,20,20,
20,20,20,20,20,20,50,72,69,6E,74,65,72
80 DATA 20,43,6F,6E,74,72,6F,6C,20,52,53,58,27,53,20,28,A4,29,20,44,61,6E,69,65,
6C,20,47,72,69,66,66,69,6E,20,31,39,39
90 DATA 30,20,61,72,65,20,6E,6F,77,20,69,6E,73,74,61,6C,6C,65,64,2E,0D,0A,0D,0A,
FF
```

HEIGHT

BY CHRIS WOOTTON

Big letters are the norm in this little program. Put the text into text$, the height (from 1-8) in h and the screen coordinates into xp & yp, then GOSUM 70. You can input letters of any size and there's also a handy demo included.

```
1 'Enlarged-Height Character Generator [71]
2 '(C) Chris Wootton, 1990 [72]
3 ' [73]
10 MODE 1:SYMBOL AFTER 256:SYMBOL AFTER 32 [1E]
20 text$="Double Height":xp=14:yp=2:h=2:GOSUB 70 [A5]
30 text$="Triple Height":xp=14:yp=5:h=3:GOSUB 70 [32]
40 text$="Quadruple Height !!":xp=11:yp=9:h=4:GOSUB 70 [44]
50 END [E7]
60 ' Printing routine (Parameters: text$,h,xp,yp) [F6]
70 FOR ch=1 TO LEN(text$):ch$=MID$(text$,ch,1):GOSUB 90:FOR y=1 TO h [B6]
80 LOCATE xp,yp+y-1:PRINT CHR$(247+y);:NEXT y:xp=xp+1:NEXT ch:RETURN [E7]
90 p=UNT(HIMEM+(ASC(ch$)-32)*8+1):b=UNT(HIMEM+1729):FOR y=0 TO 7 [C1]
100 FOR z=1 TO h:POKE b,PEEK(p):b=b+1:NEXT z:p=p+1:NEXT y:RETURN [B7]
```

SHOOT-EM-UP



BY PAUL FAULKNER

This little gem is for all of you out there who want to write shootie games but don't quite know how to approach it. As Paul points out, the bullet collision isn't too hot, but there's plenty of scope for you to work with.

```
10 INK 0,0:INK 1,26:INK 2,20:INK 3,18:BORDER 0:PAPER 0:PEN 1:MODE 1:ship$=CHR$(1
43):alien$="@ ":b$=" -":x=1:y=1:DIM bx(500):DIM by(5
00):bot=1:top=0:score=0
20 ay=1+INT(RND*23):FOR ax=39 TO 1 STEP -1:LOCATE ax,ay:PEN 2:PRINT alien$;:LOCA
TE x,y:PEN 1:PRINT ship$;:n=x:m=y:x=x+(INKEY(27)-INK
EY(34)):y=y+(INKEY(69)-INKEY(67)):LOCATE 1,25:PRINT "SCORE :";score
30 IF x<1 OR x>40 OR y<1 OR y>24 THEN x=n:y=m
40 IF x<>n OR y<>m THEN LOCATE n,m:PRINT " ";
50 IF INKEY(47)=0 THEN top=top+1:bx(top)=x:by(top)=y
60 FOR n=bot TO top:LOCATE bx(n),by(n):PEN 3:PRINT b$;:bx(n)=bx(n)+1:IF bx(n)=39
 THEN LOCATE 39,by(n):PRINT " ";:bot=bot+1
70 IF bx(n)+1=ax AND by(n)=ay THEN score=score+20:GOTO 20
80 NEXT:IF x=ax AND y=ay THEN GOTO 100
90 NEXT:LOCATE 1,ay:PRINT " ";:GOTO 20
100 FOR v=15 TO 0 STEP -1:BORDER 6:SOUND 1,0,3,v,,,31:BORDER 0:SOUND 2,1000,3,v,
,,31:NEXT:RUN
```

WORDMAN

BY CHRIS WOOTTON

It's like hangman only without the man. The computer chooses a random word out of a vocabulary of 14, and your job is to guess the letters as quickly as possible. Check out the screen for your tally to date.

```
1 'Word-Man [71]
2 'by Chris Wootton [72]
3 ' [73]
10 MODE 1:CALL &BC02:LIM w$(13),g(13):FOR a=0 TO 13:READ w$(a),g(a):NEXT [5C]
20 PEN 3:LOCATE 11,5:PRINT"WORD-MAN - C.Wootton":w=INT(RND*14):LOCATE 8,22 [11]
30 PRINT"ABCDEFGHIJKLMNOPQRSTUVWXYZ":w$=w$(w):h=LEN(w$):LOCATE 15-h/2,9 [82]
40 PEN 1:PRINT"The Word is "STRING$(h,45):c=0:g=0:WHILE c<h:WHILE a$<"A" [D6]
50 a$=UPPER$(INKEY$):WEND:LOCATE ASC(a$)-57,22:PRINT" ":FOR a=1 TO h [4A]
60 x$=MID$(w$,a,1):IF x$=a$ THEN LOCATE 26-h/2+a,9:PRINT a$;:c=c+1 [99]
70 NEXT:g=g+1:a$="":WEND:LOCATE 6,13:PRINT"Well Done. You Took"g"Guesses." [03]
80 sc=g(w)/g:LOCATE 15,15:PRINT"Score: "INT(sc*100)"%":CALL &BB18:CLS [EE]
90 PEN 3:GOTO 20:DATA AMSTRAD,6,CPC,2,ARNOLD,6,MICRO,5,ROM,3,RAM,3,BASIC,5 [DA]
100 DATA JOYSTICK,8,SOFTWARE,8,HARDWARE,7,BYTE,4,PORT,4,BIT,3,INTERFACE,8 [20]
```

The ACU team dons racing leathers this month to take on the best of the rest in Accolade's fabulous Grand Prix Circuit, trembles at the wrath of dracula in Night Hunter and joins the Heroes on the road to glory.

GAMEPLAN



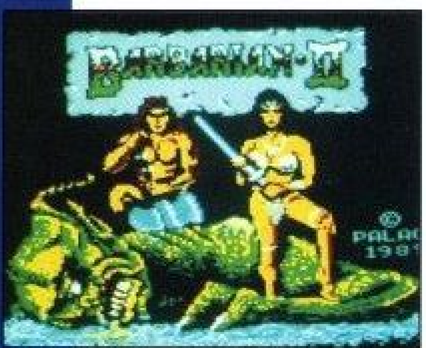
GRAND PRIX CIRCUIT

Are you tough enough to take on the challange for the chequered flag?



NIGHT HUNTER

Watch out, Dracula's about and this time he's hellbent on world domination.



HEROES

Join in as four of the toughest heroes of all time get out and do their stuff.

PLUS

Still want more? Then you've come to the right place. Check out the epic Iron Lord for starters, then try the other goodies.

TOP 20

1	(1)	Pro Boxing	Code Masters
2	(3)	Paperboy	Encore
3	(9)	Big Trouble in Little China	Alternative
4	(8)	Temple of Doom	Kixx
5	(10)	Rock Star	Code Masters
6	(7)	Jack The Nipper 2	Kixx
7	(NE)	Match Day 2	Kit Squad
8	(20)	World Cup Challenge	Players
9	(12)	Vindicator	Hit Squad
10	(NE)	Question Of Sport	Encore
11	(NE)	Pro Tennis Simulator	Code Masters
12	(11)	Quatro Sports	Code Masters
13	(2)	Fantasy World Dizzy	CodeMasters
14	(17)	Road Blasterst	Kixx
15	(NE)	Rough And Reddy	Hitec Software
16	(NE)	Shadow Warriors	Ocean
17	(NE)	Escape From Singes Castle	Encore
18	(NE)	Turrican	Rainbow Arts
19	(NE)	Live And Let Die	Encore
20	(5)	World Cup Soccer '90	Virgin

Last month's position in brackets
Top 20 compliled by Gallup



Iron lord

The age of chivalry returns in the shape of Tibor junior.

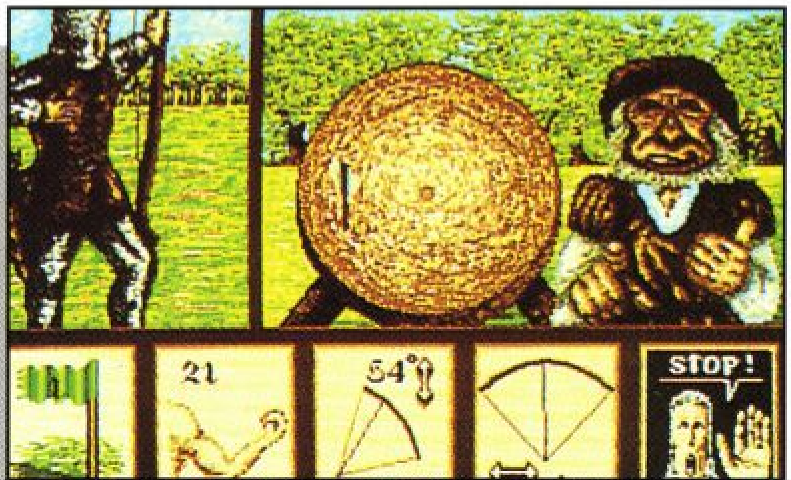
Look out adventure freaks. This one's gonna knock you for six. Included in this excellent package are two double-sided discs, cram-packed with action in a quest to restore goodness to the land.

The storyline? The wicked sorcerer Zolfahr has returned to reclaim the kingdom of his brother Tibor. Darkness reigns over the land, but the king's son has escaped the evil baddie, and he's determined to live up to the old legend that only one of Zolfahr's kin can restore light to the world.

OK, that's a very brief resumee indeed. In short, he's grown up and he's out on the prowl to raise an army to defeat his uncle and this is where you step in.

You start off the game with an overview of the old king's castle and the surrounding countryside. Using the joystick, move the cursor around to wherever you want to go and press fire. Try looking around the castle first.

In true adventure form, most of the minor action takes place in windows. You can just about make yourself out when you're stumbling around the grounds.



Next up, try one of the villages. There's a neat little horseriding sequence as you travel around. In Chatenay Malabre, you'll come across the grand old archery contest, where you can prove your mettle as a combatant. You'll also meet some very interesting people to chat to.

Get through the archery and it's onto the arm wrestling. Beat nine adversaries and you're doing well. Next up comes the dice-throwing and a much needed chance to make some money.

The idea is generally to impress as many people as possible so that you can assemble a fair sized army to take on Zolfahr.

Take care on leaving villages, you may be confronted by an assassin and challenged to a duel. If so, there's nothing to do except waggle your joystick to the death.

Having come through all of this adventure and more, through the use of some excellent icon work, discussion and hunting about, you should have enough support to go back to the castle and levy your troops.

Position them well to ensure you don't get overwhelmed by your uncle's forces.

Once the great battle is over and, assuming you've been successful to date, it's time to dive into the sorcerer's labyrinth, six levels deep and full of danger. Watch your energy level here, as it reduces the longer you hang around.

Between each level of the labyrinth, you'll encounter an arcade sequence, where you'll have to be quick to destroy the monsters as they spit acid at you.

Last, but by no means least in this superbly styled adventure, you get to take on Zolfahr himself.

There you have it. An excellent offering of epic proportions, quite a rarity these days. With the clever mix of icon entry, arcade style screens and window, Iron Lord is exceptional value for money on the old CPC, and one game no serious gameplayer should be without.

John Taylor

ROUND-UP

NAME	Iron Lord		
FROM	Ubisoft	PRICE	Disc £19.99
82%	76%	89%	TNT
GRAFFIX	SONIX	PLAYABILITY	VERDICT



HEROES

When the going gets tough, the tough play Heroes.

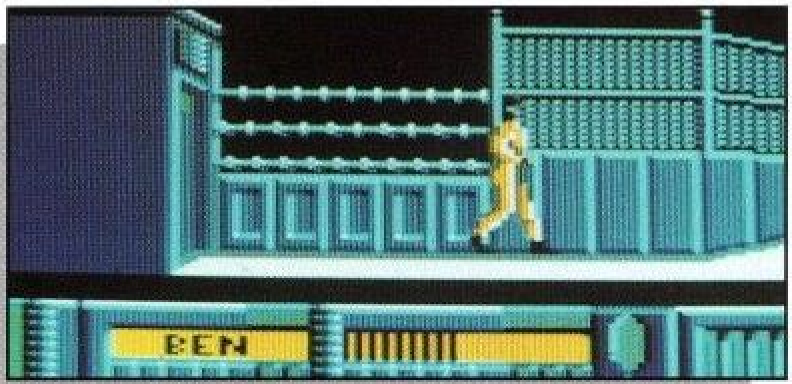
Put away your Elevenses, this is no time for milk and biscuits. Plug in this masterpiece and you're on a non-stop route to hell and back with four of the biggest action blasts to date.

Flex your muscles, grease the firing trigger and get set to shoot in the Bond classic Licence to Kill for starters. Sanchez is the villain and your task is to stop the evil drug smuggler at all costs, in the air, overland and underwater.

Set over three different scenarios, Licence to Kill will have you leaping from helicopters, onto planes, swimming for your life, waterskiing and finally, taking on the fleet of big-wheel trucks as Sanchez makes a break for the border.

Graphically excellent, this Bond classic will have you on the edge of your seat at all times, but if the suave and sophisticated approach of 007 is not your style, try beefing it up in Barbarian II instead.

At the end of the last Barbarian epic, you'd just rescued the Princess Mariana from a fate worse than death. Now you've got to take her back into the Dungeons of Drax to do away with the baddie himself.



You can decide whether to play the barbarian or the princess, whichever way you are inclined, and the idea is to battle your way through three maze levels before breaking into the Inner Sanctum.

Get used to the joystick movements first, then keep your eyes open for the magical objects strewn around the screens which you need to survive in this inclement atmosphere. The opposition, in the form of some fearsome and foul beasts, is tough enough to deter the most ardent of warriors, but if you thought that was bad enough, wait until you reach the final level.

Pick up the skulls to gain much needed extra lives and start hacking in this superb all-round smash-em-up.

Moving onto the bright lights and razzle dazzle of the game show world, here's your chance to take on the role of Ben Richards, a man wrongly accused of a crime he didn't commit, a man desperate to prove his innocence; the Running Man.

If you haven't seen the film, don't worry, there's plenty of action to keep you glued to your screen. Take on the likes of the Iceman, Buzzsaw and Dynamo in your efforts to escape from the four game zones. Your final quest is to break back into the studio and finish off that scumball show host Damon Killian.

In the meantime, you'll also be helping the rebel forces by deciphering the up-link code between levels in this fast moving, kicking, punching future shock.

Last, but by no means least, in this impressive menu is the golden oldie Star Wars. Taken directly from the film, the job in hand is to fight off the Emperor's nasty Tie-Fighters in a deep space dogfight, take on the might of the Death Star's tower laser emplacements and finally, get down into the trench and stick a missile down the exhaust port.

Combining frantic screen action with some marvellous sound effects, Star Wars is a brilliant game in its own right, but to round off this excellent compilation, its worth its weight in gold.

Chris Knight

ROUND-UP			
NAME	Heroes		
FROM	Domark	PRICE	Disc £19.99 Cassette £14.99
86%	84%	88%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT

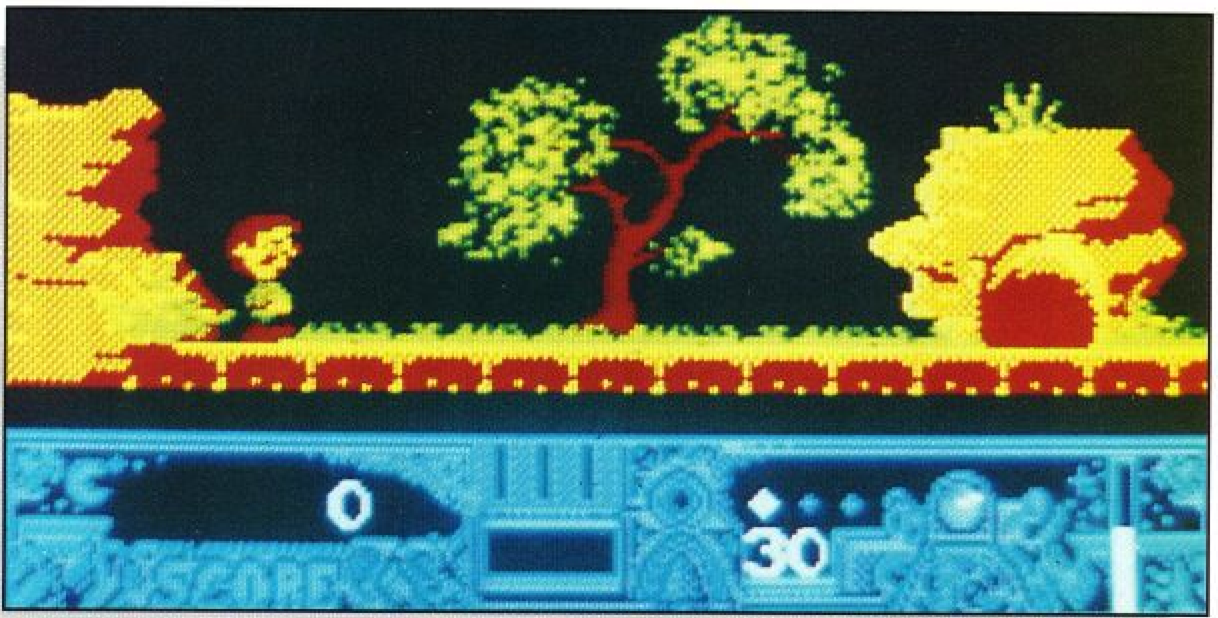
Twin world

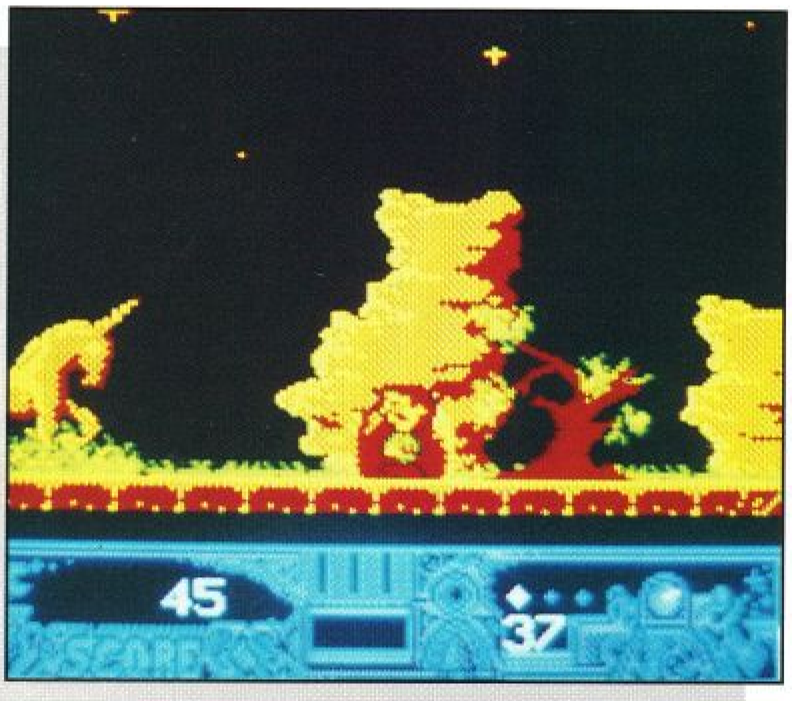
Enter a weird and wonderful new world in the quest for good against evil.

Forget about reality here for a second and imagine a time when fabled thingies abounded and magic and mystery were the norm. A time when the forces of good and evil survived together and a very thin line divided the powers of the two.

If you can conjure up that kind of image, then you'll begin to get to grips with the incredibly complex aura of Twin World.

For centuries, the Gaspards lived in their twilight world, under the fair rule of the Cariken. Now the





Carikens possessed a sacred amulet which kept badness at bay but, as is the norm with ancient relics, it slipped into oblivion, allowing the dark sorcerer Maldur to storm in and massacre the unsuspecting Gaspards and the Carikens.

A legend arose which told that if a single survivng Cariken could once more hold the amulet, darkness would be driven away forever. To prevent this, Maldur split the amulet up into 23 pieces which scattered around the world.

Surprise, surprise, one of the Carikens did survive the massacre. Ulopa, brought up by an old servant of the dead king, has been primed for his quest,and he's ready for the off. Grab your joystick and be prepared for some marvellous graphics and superlative gameplay in this fantasy adventure.

On route to the sorcerer's lair, you'll pass through some excellent scenery. You'll also meet a fair few baddies. Armed only with your magical stones to start with, battle your way through the wasteland taking on some wicked looking Goulous, amongst other things (well, all the names are in French, so I won't list them all here now).

If you manage to make it past four levels, you get the chance of a bonus round. The more bits and pieces you've retrieved, the more points you get. Then it's off to even weirder surroundings.

At the beginning of each new level, you'll see the status of the amulet and how well you've done, so keep poking your nose into every corner for clues.

The amulet chips are usually diagonally shaped and exist only in the Twin Worlds, and you can jump in and out of these worlds to pick up the pieces.

Throughout the levels, pick up as many flutes as you can. These can be used to summon the merchant, who can sell you urgently needed supplies as well as extra lives. If you do eventually succeed in finding all 23 shards of the amulet, you'll need all the help you can get to take on the sorcerer at the bitter end.

For sheer imaginativity, Twin Worlds is a masterpiece. Controlling Ulopa is simple, but you'll need to practice throwing the different types of stone he can acquire.

One of the minor drawbacks of the game is that, if you get zapped, you go right back to the beginning of the level and start again. This is a touch infuriating, but it should drive you on to achieve better things.

The game is certainly addictive. It is also colourful, with some groovy monsters to keep you tearing across the screen. For high adventure stakes, get Twin Worlds and play it now.

John Taylor

ROUND-UP			
NAME	Twin Worlds		
FROM	Ubisoft	PRICE	Disc £14.99 Cassette £9.99
87%	78%	88%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Multi player soccer manager

It's a game of two halves and you'll need to control both.

It's tough at the top. Your boys have played out of their skins to make it to the top of the League, with just a few games remaining. A sound thrashing of the local rivals leaves you amongst the final eight of the cup. Your bank balance has never looked so healthy. Your future is looking rosy until that is, you read the newspapers and find out that your unruly followers have led to your team being banned from the glory of Europe.

Yes, all this and more could be yours in the latest footie offering from D & H games. Not only do you get the chance to manage your favourite team to the top, but three of your mates get to do the same as well; should really hot up the competition.

OK, I know we've had just one or two footie management games before now, but from the looks of the menus in this one, it seems to be the ultimate.

There are 64 teams in all in the four divisions. Once you decide to take one over, it's all yours, lot, stock and barrel. You've got to look after the players, the scouts, the physios, the coaches, just about everything really, and don't forget to keep the bank manager sweet, or things could go horribly wrong.



Beat the others to the best transfer deal and make sure your sponsors are happy with your wheeling and dealing before you get underway with the 30 week season.

If you've got your best squad out there, you've got a chance. Train them well, keep them happy with a few bonuses if they perform well, and for those that don't, there's always a sacking option open to you.

Continued success will bring the crowds reeling in to see your boys. A televised outing will do you no harm either, but you'll have to be prepared for the likelihood of crowd violence in a capacity filled stadium.

At the end of the day, it's a funny old game and you'll need a fair amount of skill to do the double. Keep the crowd happy with your team performances and don't be miserly with your retirement deals, you need all the good press you can get to survive in the heady world of professional football.

For those of you who like the game and enjoy a fair amount of strategy, Multi-player soccer manager will be a joy to play, with some excellent icon controlled entry, clear graphics and a real atmosphere to savour. Even if you think you've had your fill of football games, get a copy of Multi-player Soccer Manager anyway; it'll be money well spent.

John Taylor

ROUND-UP			
NAME	Soccer Manager		
FROM	D&H Games	PRICE	Disc £14.99 Cassette £9.99
76%	68%	72%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Grand prix circuit

Go for the chequered flag in the ultimate performance car test.

It's hot, awful hot in the flameproof overalls. Keeping your helmet off until the last moment to savour as much fresh air as you can, you catch the signal from the engineer: start her up.

Pulling yourself firmly into the cockpit of your sleek Honda 1.5V6 turbo Mclaren, you feel the throb of raw power erupt into life as the switch is thrown on over 900 horsepower of engine. This is your chance to prove your mettle against some of the biggest names on the Grand Prix Circuit.

So the Ferrari tipped you to pole position in the qualifying lap, but you're not too concerned about that. You know this Silverstone track like the back of your hand and, with the home crowd urging you on, you know this race is here for the taking.

The red light flashes once, twice and then it's green all the way and the chase is on.

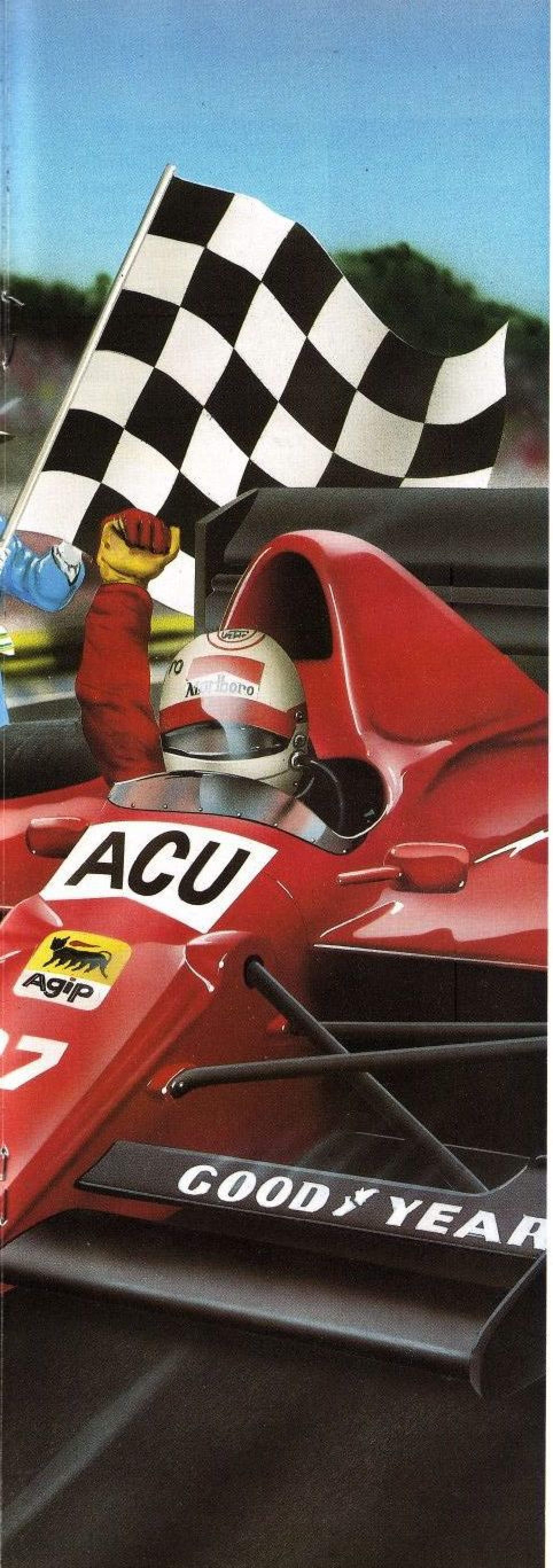
If you're into fast moving racing simulators, this is one beauty you won't want to miss. It's jam-packed with options and before you know it, you'll be totally wrapped up with the Grand Prix scene, cursing the regular favourites on the track and ruing the fact that you've got to make pit stops just when you've managed to pinch the lead. yes, it's just like the real thing.

Starting off at the beginning of a new season, you get the chance to do a few practice spins in your authentic Formula One car. You decide which team you want to race for, so you can join Mansell in his last season at Ferrari if you like, or plump for the sleek Williams outfit.

All of the circuits are taken from real life, so take it easy







on the twists and turns of the streets of Monaco, and blast out on the fast straights of the German Nurbergring.

Moving on to Japan, you'll get a taste of driving in the dark through the tunnels in one of the toughest challenges to date.

Throughout the championship, you'll be competing against world-class drivers, each with their own distinctive styles, so study them well and decide when and where to make your moves.

Inside the cockpit, the forward view of the track is exhilarating, but keep your eye on the special insets at the same time, to show you your location, lap number, current position and race time. Your rear view mirrors will also keep you in touch with the action behind you.

During each race, you need to decide just when you're going to make that all-important pit stop. Time it to perfection because seconds can mean the difference between first place and nine points, or a lowly fifth place.

If you think you can tame the awesome power of these sleek machines, then take your place with the best of the rest and compete for the prize – the title of World Driving Champion.

Some of the scenery in this excellent simulator are breathtaking, although you'll need to work hard to control the cars at first to make the most of the smooth scrolling. Keep your ears open for the roar of the engines and take care to time your gear changes to perfection, it could make all the difference.

Although Grand Prix Circuit is only scheduled for disc and cassette release as yet, the new sound and graphics capabilities of the cartridge system of the new CPC machines, make this game an excellent candidate for the works, and let's hope we see it there soon.

In the meantime, get to know the feel of the car you've chosen, blast it for all it's worth around the practice track with uninhibited speed and try and survive until the end of the season. If you can do that and get yourself up in the rankings first time round, you're not doing badly.

As you come to know your competitors, you won't want to give up on a first attempt though. The next time round, and the time after that, it becomes a grudge match as you try to topple the stars from their pinnacles.

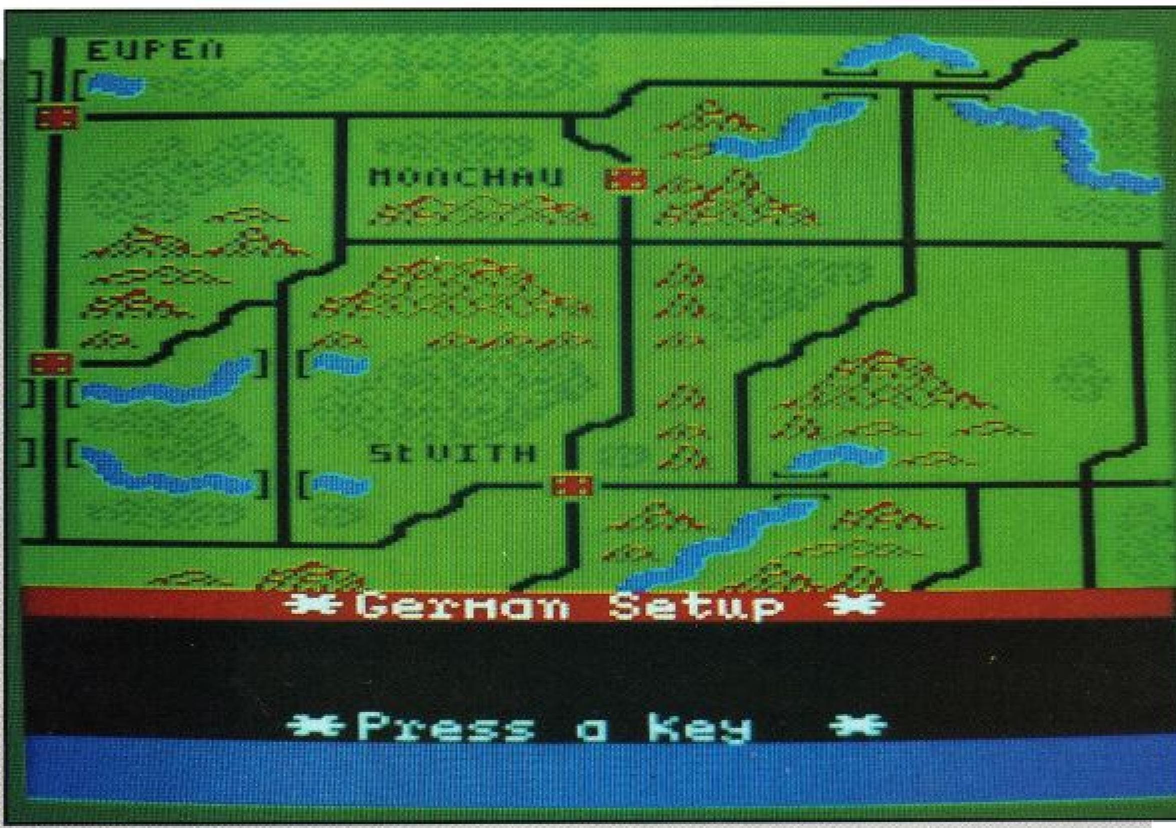


After all, it's got to be worth it when you finally see yourself at the top of that table with the victory laurels around you shoulders, the chequered flag draped across your racing machine and the good old magnum of bubbly in your hands. Just mind you don't drink it all at once.

Chris Knight

ROUND-UP

NAME	Grand Prix Circuit		
FROM	Accolade	PRICE	Disc £16.99 Cassette £9.99
88%	82%	90%	GOLD
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Battle of the bulge

Test your arm at the real thing in the mist and snow of the Ardennes – 16th December 1944.

As 1944 drew to a close and the allied armies appeared to be making progress after the long and bloody campaigns in Northern France and Belgium, three German armies made a surprise attack on one of the weak sectors in the allied line in a last desperate gamble to win the war.

It was a gamble which, had it not been for some heroic manoeuvres on the allied front, could well have paid off. As it happed, the Battle of the Bulge became the largest battle on the Western Front. Think you're up to it?

Right, take a hold of your battalions and prove it. As a one or two player game, you can relive the entire battle just as it happened using the historical deployment option, but if think your tactics are better, try your own.

At the start of the game, you get to change the odds for, or against you. The poor weather option will disable your airfleet and stop you from making reconnaissance missions. Playing out the Command Crisis scenario will assume that Eisenhower did not make Montgomery Commander of the northern shoulder. In this eventuality, you get no British troops coming to your aid.

If General Patton had not been able to swing his army north in such a short time, the outcome of the original battle could have been very different. Try this option and see the results!

Once you've sorted out your deployment and playing conditions, it's time to start moving. If the weather is good, send in your planes to recce, straff and bomb – it's nice to lower the opposition's morale a touch.

Throughout the game, you and the computer, or a friend, take turns to move your troops, tanks, gun emplacements and combat units. Once the moves have been simply made by moving the cursor over a unit and pressing the appropriate order key, it's time to take cover for the combat round.

You'll soon find out if you made the right moves as the firing begins.

The idea of the simulation is to stop the Germans reaching the two road entry points at the top left hand corner of the map near Namur, If this is reached, they've broken through to Antwerp.

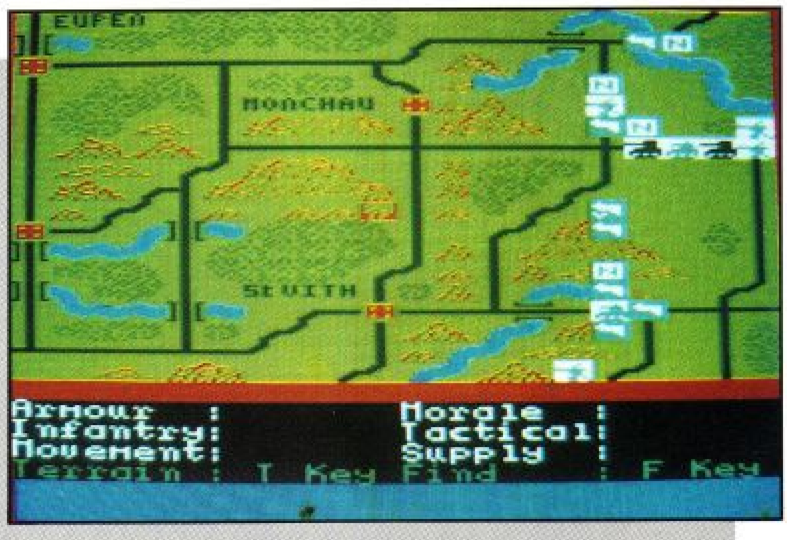
Your job is to prevent this, and also to prevent them capturing towns by making sure yours were the last units to pass through them.

Demolishing roads and bridges will hinder their progress, but keep an eye on your supply dumps when you start blowing things up.

The battle will finish on 2nd January 1945 if the Germans make the breakthrough, or any time before that if one of the sides has been obliterated.

As a taste of the real thing, Battle of the Bulge will be hard to beat. You'll need to utilise every last ounce of cunning and strategy to survive in this historically accurate masterpiece.

Dave Peach



ROUND-UP			
NAME	Battle of the Bulge		
FROM	CCS	PRICE	Disc £14.95 Cassette £12.95
72%	65%	78%	CURRY
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Night hunter

Beware the darkness when foul creatures are afoot and evil stalks the earth.

A time of great darkness is settling upon us, the night air is alive with menace and the hills resonate to the howl of the werewolf; or is it just the wind.

For centuries, mankind has been protected from the wrath of the vampires by a number of sacred medallions hidden within the walls of the towns, which served to balance out the forces of good and evil.

But Count Dracula is hungry for blood, and he's decided the time has come to put matters straight. Well, it's hard scratching a living as a vampire nowadays.

In this marvelously ghoulish tale, set over five 20 screen levels, you take on the role of the evil Count, determined to fight his way to the medallions and make a bid for world domination.

Standing in his way however, is that legendary Vampire Hunter Professor Van Helsing, who's not only got wind of this foul plan, but he's also alerted the townsfolk and got them out on the hunt for you.

The odds may seem a little stacked against you as you come across enemies armed with wooden stakes, priests with phials of holy water, archers and sorcerers, but don't worry overmuch, you have a few tricks up your sleeve as well.

Not only are you Dracula, but you also have the ability to transform yourself into a werewolf and a bat as well. Quite a party trick.

On each level, you need to pick up five coloured keys and three parchments. The keys will get you further into the game and, at the end of each level, you'll find the town where the medallions are hidden. Go through the red and blue door and you've reached the next level.

Taking on the form of the werewolf, you'll find yourself impervious to some of the weapons of your adversaries, but watch out for the silver bullets. When taking on the form of the bat, you can get over some murky looking stretches of water, but you can only land again on terra firma, not on any of the platforms.

If you happen to get hit by any missiles whilst in your transformed states, you automatically return to the form of Dracula. Time to get your teeth out and start biting.

Getting used to the transformation and biting techniques will take some time but, once mastered, you can certainly give the good guys a run for their money.

One tip: Professor Van Helsing is indestructable, so avoid him carefully when he appears at the end of each leve.

Night Hunter is a splendidly thought out game, with plenty of fresh ideas to keep you glued to the screen. What there may be lacking in colour is more than compensated for by the action and if you get caught up in it, make sure you get to the crypt before Dracula come the morning, or you'll end up having many a sleepless adventure.

John Taylor



Fancy a bite to eat?

ROUND-UP

NAME	Night Hunter		
FROM	Ubisoft	PRICE	Disc £14.99 Cassette £9.99

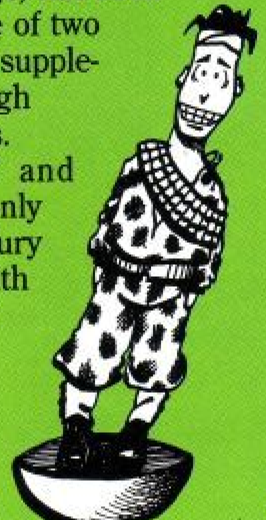
GRAFFIX	SONIX	PLAYABILITY	VERDICT
78%	76%	86%	

Get Down With the ACU Crew

As the nights draw in, so have our designers and come up with the fab NEW LOOK ACU. Our editor has been driving his team to new depths just for you! He has sent the Hairy Hacker delving back into his murky past (Yuck!) in hot pursuit of every poke, cheat, hint and tip on your all time favourite games.

This furtive fruit of Hairy's misspent youth (and early middle age) has been hand-crafted into part one of two sensational 32 page colour supplements, to see you through those dark, wintery nights.

Christmas is comin' and Ziggy's getting fat. The only way to survive the festive fury is to go underground with the ACU crew. So what's in the pipeline?

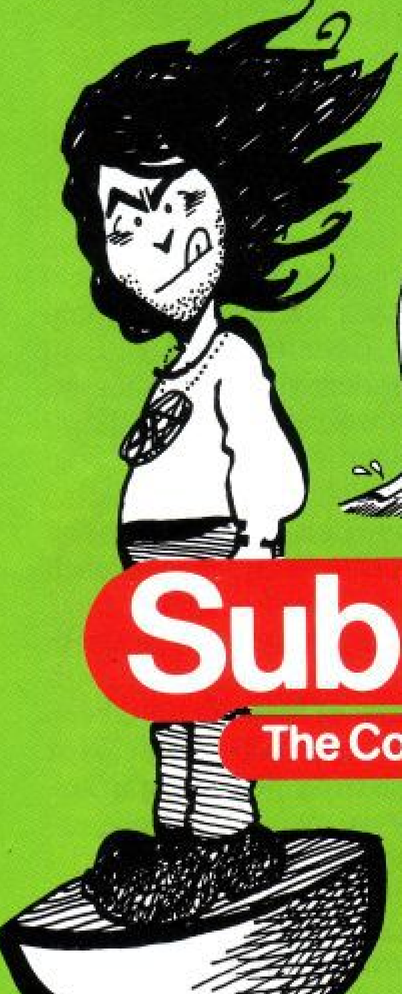




Don't think that our editor only hangs out with very strange people. He found Doc Dorn buried under a thousand year project to program himself to Alpha Centauri and dragged him back to earth to help out us humble mortals.

Last, but by no means least, Gallant Gordon Bates, found trembling at the thought of a number two under a barber shop chair in Crewkerne, joins in to impart his inimitable know-how of the comms scene as payment for protection of his hallowed hairstyle.





Subbuteo®
The Computer Game

AMSTRAD A.C.U.

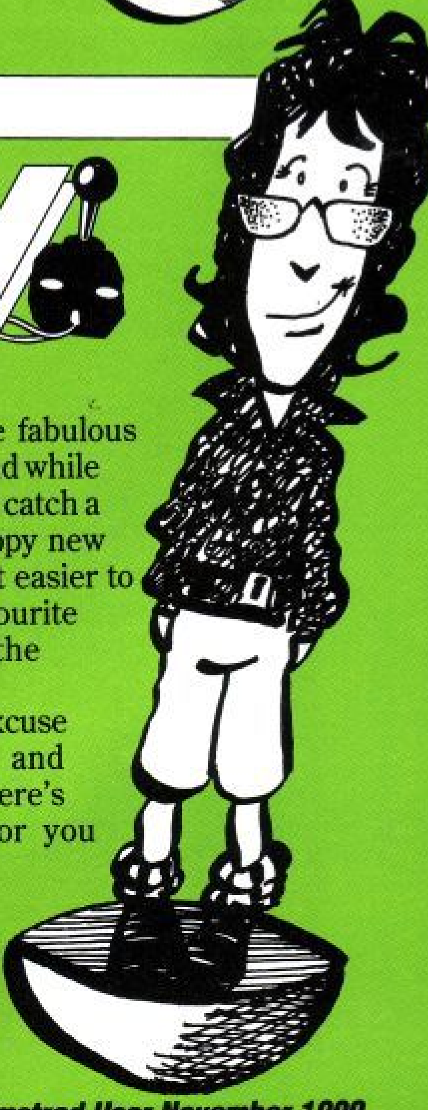


An EXCLUSIVE peep at Electronic Zoo's fab conversion of that table top classic Subbuteo, prizes aplenty to be won, a chance to become the new New Kids on the Block with our sensational Music Making with the CPC series and lots, lots more, brought to you by your favourite people:

Auntie John (discovered by the editor in an all night perm parlour and canine coiffeur joint in Dakron, Ohio) peels back the mystery of the CPC with his pince-nez a-glitter and his nose a-drip.

Hairy Hacker (rescued from a home for toothless rottweilers in Sao Paulo, Brazil) puts the soft into software to help you get the high scores.

Sgt. Amstrad, in the hirsuit form of John Cook, recruited by ACU from the catering corps of the SAS immediately after the exploding bread pudding scandal of Iwo Jima, is your mucho macho mate through the mud and bullets of the arcade scene – and he grills a mean soya bean cutlet!

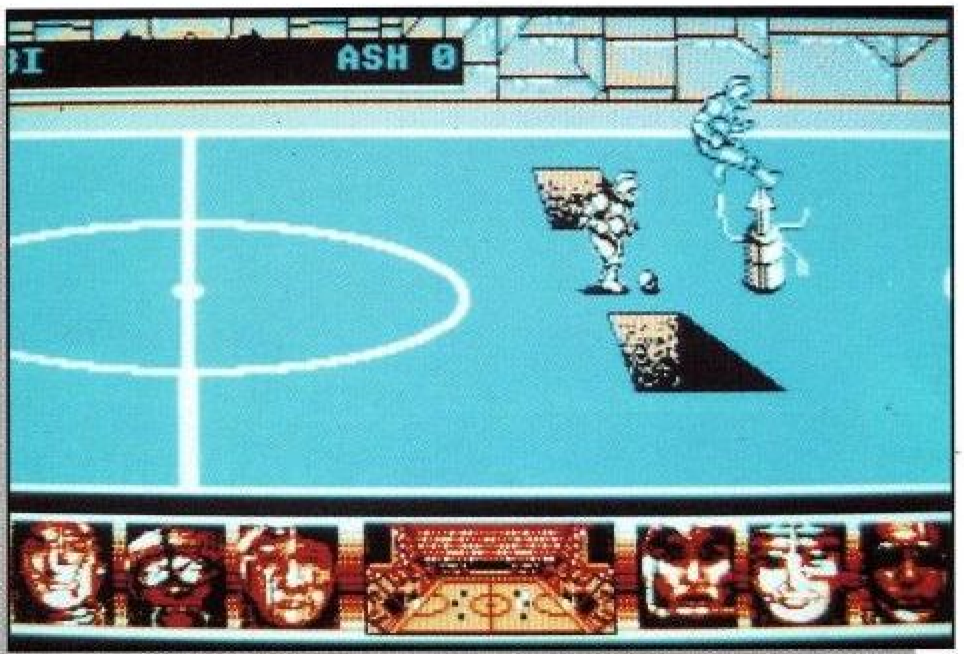


Jump on the fabulous ACU joyride and while you're about it, catch a load of our zappy new logo, making it easier to spot your favourite magazine in the shops.

There's no excuse now, get out and make sure there's one waiting for you every month..

Skate Wars

Keep your footing in this slippery-slidey battle to the death



Ice hockey's got nothing on this one boys and girls. If you thought Rollerball was grisly, then wait till you get hold of a copy of this one.

Coming into the arena, you are treated to an overview of the ice rink in glorious technicolour, just so that you know what you're up against.

On the first level, don't expect to be too daunted, all you get is the rink and the two goalmouths. Moving back into the centre, it's just you against the computer or a friend. The ball is waiting in the middle, the whistle goes and you're off.

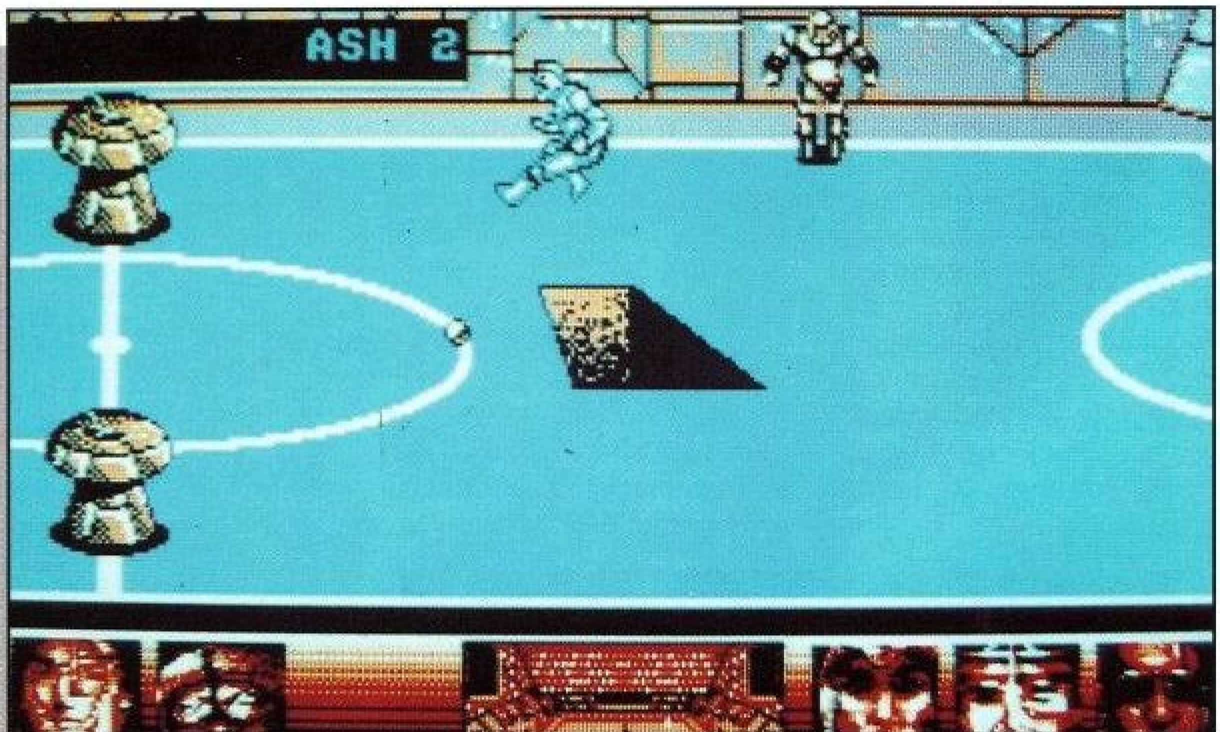
There are nine rounds for you to compete in, each of them becoming progressively harder. In the first round, you've got the whole skating arena between your character and the opposition, as well as the goalies, so pick up some steam, use your sliding tackles and barges to put off your oponent, and slam the ball into the back of the net.

Each game finishes when either team scores five goals, and then it's up to the next level.

Coming into the second round, your first sight of the arena will tell yuou that something strange is happening. "I didn't see those strange bollard looking things last time", I hear you cry. Well, you're right, you didn't, but bump into them and you'll certainly know about it.

As you reach the higher levels, you'll discover pits in the ground, some lethal looking mines and, on the last level, some weird vacuum cleaner shaped objects that obliterate everything that touches them. Yes, that means you too.

Luckily enough, you do have some substitutes sitting on the bench to replace your fallen hero and before the game begins, you get the chance to sift through each character to see which ones you want on your side.



There's also a handy practice option for you to get to grips with the playing surface and flick through the levels to see just what horrors await you.

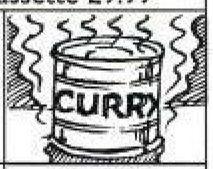
Normal skating is fairly easy, but take extra care when the pits start appearing; they're awfully hard to avoid at full speed unless you've mastered the jump.

With the two player option, Skate Wars will bring out the worst in you. Be warned, the competition is fierce, especially as you don't just stop at the end of each game. Each play is made up of all nine levels, with the aggregate score added up at the end to determine which of you has walked away with the honours, so be prepared to make some enemies here as you shoulder barge your way to success.

The sound may not be up to much, but for pure excitement and competivity, go out and get this one as soon as possible.

Chris Knight

ROUND-UP

NAME	Skate Wars		
FROM	Ubisoft	PRICE	Disc £14.99 Cassette £9.99
89%	68%	88%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT

Budget Basement

All the lowdown on Code Masters' superb Quattro series in this month's penny-saving section.

Have you ever had one of those days when you've played every single game in the house to ribbons, you're desperate for more action, but you know you're down to the last of your pocket money? I know I have, and it's certainly not nice.

Thankfully, you need worry no longer. With Code Masters' ever increasing series of Quattro packages on the market, you can now get four sizzling hot games for the price of a cream tea!



For sport freaks, look no further than **Quattro Sports,** an excellent combination of two and four wheel race simulators, as well as some skiing and snooker thrown in for good measure.

Grand Prix will have you and a friend racing around 14 cunningly devised circuits against the clock, while the BMX Simulator puts the toughest to the test over the bumps and ramps of seven wicked courses. Catch the action replay and slo-mo options for wacky results.

Staying in the great outdoors, match your skills against some of the fastest downhill ski slopes you could imagine. It's just like the real thing. However, for the more sedate at heart, you can also take time out for a concentrated attack on the green baize of the snooker table.

The more robust amongst you might prefer the rough and tumble of **Quattro Power,** featuring dirt biking action at its best in Moto X, day and night racing in Twin Turbo V8, wheelies and spins in the ATV quad racing simulator and a chance to blow your friends to pieces against the rocks of the superb Pro Powerboat challenge.



Yes, all that in one budget priced package can't be bad can it?

Quattro Adventure will have you leaping and jumping and pondering puzzles-a-plenty, and includes the classic smash Dizzy. Swashbuckle abounds in the legendary tale of Robin Hood, while for lovers of ghoulies and ghosties, there's more than enough to keep you happy in Vampire and Ghost Hunters.

Last but not least in the Quattro tally to date is **Quattro Combat.** This one has got to be a must for shoot-em-up fans, if only for the sheer variety of zapping and blasting to be had in the sky and on the ground.

Get to grips with your firearm in Death Stalker and SAS Combat, try out a few moves oriental style in Ninja Massacre, and then take your jet fighter for a spin, or engage in a howling dogfight in Arcade Flight Simulator.

Whichever of these marvellous packages you choose, you can rest assured that your money has been well spent. Each of the games is produced with Code Masters' usual style of excellence, with superb graphics and unbeatable playability value, but if I were forced to pick my favourite, it would have to be the Adventure collection; the appeal of our little egg shaped friend Dizzy is just too strong to ignore. Apart from that, be sure that with this little lot on your shelf, you need never worry about rainy days again.

Chris Knight



ROUND-UP

NAME	FROM	PRICE	RATING
Quattro Sports	Code Masters	£2.99	78%
Quattro Power	Code Masters	£2.99	82%
Quattro Adventure	Code Masters	£2.99	90%
Quattro Combat	Code Masters	£2.99	86%


THE DARK SIDE
£1.75
The Magazine of the Macabre and Fantastic
THE PHANTOM OF THE OPERA
Robert Englund is the Man Behind The Mask!
CLIVE BARKER On Nightbreed!
HIGHLANDER 2
Behind The Scenes Exclusive!
THE RE-ANIMATOR
Jeffrey Combs Interviewed
HAMMER GLAMOUR
Caroline Munro!
Plus: George Romero • Dario Argento
Tom Savini • Sam Raimi •
Alien Nation
Collectors Issue 1
COMING—
—SOON
Beware!
THURSDAY SEPTEMBER 27th

In which intrepid, handsome, and incredibly poor Gordon outlines ways to keep your telephone and online bills to an absolute minimum.

Keeping the Share Price Down!

Greetings, fellow modem users (and those considering taking the first step). After many electronic messages all asking the same question – along the lines of 'How do I pay my phone bill and online charges now I'm a communicator?' – it seems to be a good time to reveal a few of the secrets of keeping online time to a minimum, and yet still using the systems to the same extent – and even more, come to that.



Now, we'll start at the beginning, with a quick outline of what most people who get ginormous bills do – and why they get ginormous bills. There may be a few sums in amongst this lot, but you can cope with that, can't you?? You can? Good!

OK – Bill Bloggs is first up. Bill logs onto three systems regularly. One is Maxwell House, another is Micronet, and the third is Telecom Gold (could be Microlink as well). He lives in Aberdeen, and has been happily married for thirteen years (which, as he says, isn't bad for a feller that got married eighteen years ago.)

His day goes like this. At lunchtime – 12:15, he logs onto Maxwell House, long distance, using his manual dial modem at 300 baud. He reads his mail online, and answers each one as he reads it. He usually gets around five or six items of mail. When that's done, he reads the public messages, and replies to any and all that he feels like, again online. His last excursion is to the files areas, where he goes the long way round, and lists all the files to see what he hasn't got, instead of using the (N)ew command to see what's been put there since the last time he logged on. This is a daily occurrence. He may or may not download, and may or may not upload. This all takes about an hour, 45 minutes of which is at peak rates, and 15 minutes of which is at standard rates, long-distance, into London.

At 17:30, he returns from his job in a local bookmaker's, and, before he sits down with a cup of tea, logs onto Micronet. Here, he goes through exactly the same routine, except this time at 12/75 (his modem will handle only those two speeds). He reads mail, answers online. He reads public letters, answers online. He checks out Telesoftware – no need to upload. He reads any articles that interest him online, and any that inspire him, he makes comments on there and then, online. He usually finishes this first Micronet session at around 18:30.

His next port of call is at 20:00 hrs, when he logs into Telecom Gold. His modus operandi is more or less the same on here as everywhere else – he does everything online.

Next door, his neighbour Arthur Minute also uses the same three services, but his schedules are very different. He works at the same Turf Accountant's offices, and works the same shifts as Bill. He NEVER logs onto

ANY system before 19:00 hrs, and once he's got his modem online, he doesn't even look at the screen.

At 19:00, he logs onto Micronet, and captures any mail he has waiting into a file on a disc he's set aside for the purpose. He accesses the system at 2400 bits per second, a local call. He also captures any articles that take his fancy, in the same way, onto another disc which is dedicated to that task he's now got an archive of some twenty discs, holding nearly eighteen months' worth of Viewdata frames on all kinds of topics, which he refers to constantly when he needs information. When he's captured the frames, he sets a command file into operation, that scans all of the letters areas he uses, and captures that day's letters off onto yet another disc that he has dedicated to just that task. After roughly ten minutes, he logs off, having got all of the info that Bill got, but without having read any of it yet.

At roughly 19:15, he dials into Maxwell House, this time at 2400 bits per second line speed, but driving his MNP level 5 equipped modem at 4800 bits per second (BPS). His actions are more or less the same. He captures all of his mail, and all of the public messages, then uses the files (N)ew command to give him a list of the new files and their descriptions, which he also captures. Then he logs off, having spent maybe ten minutes online, at long-distance off-peak rates.

His final port of call is Microlink, where he does the same sort of thing again, again taking maybe ten minutes to get everything he wants. So far, during the course of the half hour he's been online, he hasn't sent ANYTHING in the way of messages, and hasn't downloaded a thing in the way of software. He HAS got a permanent record of his messages on disc, and can read everything that Bill reads, but at his own pace, and without incurring any more time charges or phone costs.

The next hour or two are taken up with Arthur reading his mail, articles, and so forth, and deciding which messages he wants to reply to. He boots his word-processor, and writes he replies, plus any messages he wants to send to public areas on all three systems he uses. He saves the files off onto three separate discs, and uses the same filenames every time. His software looks for those filenames – because he's programmed it so to do.

At 22:30, he logs onto Maxwell House again, and sends his mail and messages, and also downloads any software he's decided he wants. He doesn't read any messages, even though the system tells him he has new mail. If he doesn't download any software, he's off the system in about five minutes.

His next port of call is Microlink, where the same routine is followed, for about the same length of time. Finally, at 00:00 midnight, he logs onto Micronet again, and sends his mail automatically, at 2400bps. If he feels like it, he plays one of the MUGs for an hour – it's cheaper after midnight.

When the end of the quarter comes, and both Bill and Arthur get their respective Prestel, Microlink and Phone bills, Bill pays roughly four to five times what Arthur has to fork out, yet Arthur actually reads more, and gets much more use out of all three systems. He has an archive of useful information that he can refer to, and still finds time to play online games – something Bill wouldn't dare do.

Do either of these characters ring a bell with you?? Are you a Bill, or are you an Arthur? Think along these lines. Arthur's gear cost him considerably more than Bill's did – Bill got his modem for free when he joined Micronet four years ago. Arthur also got one at the same time, but bought an MNP equipped modem within six months – when it cost him an enormous sum of money – but the difference in the two lads' bills over the last four years is much more than the cost of the faster and more fully equipped black box.

Bill just doesn't seem to realise that peak rate phone calls are incredibly expensive – every minute you spend on the phone before 13:00 hours will cost you five times what it costs after 19:00hrs. Arthur NEVER uses anything but cheap rate calls.

Bill does EVERYTHING online, in real time, and he doesn't type all that quickly. It wouldn't matter even if he did, because at 12/75, his modem couldn't keep up. (As a matter of interest, yours truly gave up using 12/75 ages ago, because, quite simply, I can out-type the 75bps by quite a margin – I found I had to slow down to use it!) Arthur does NOTHING online except play games – and even then, he uses his software to help him.

Bill can't upload at faster than 300bps. Arthur's fastest upload rate is nearly 4800bps – almost 16 times faster than Bill's. So, even if Bill were to decide to use Arthur's schedule and methods, he would still be worse off.

My advice to Bill would be as follows:

1. Get a new modem – allow a lot of money for it, and buy the fastest MNP equipped job you can afford. If you can't stretch to an MNP modem, at the very least get one that can handle 2400bps. Forget 12/75, it's a waste of space, and not needed. 99% of services can offer you at least 1200/1200, if not 2400/2400, and the ones that can't probably aren't worth calling – they'll be too expensive for you to use.

2. Limit yourself to making calls only after 19:00 hours, unless someone else is paying the bills.

3. Stop writing letters online – pre-prepare them offline, and use your software to send them quickly, at the highest speed the service you're using can accept.

4. Stop reading stuff online. Get on, grab it as a file, and get off. Read it offline – it costs you nothing then! BT can't bill you if you're not on the phone!

5. If your software won't handle it, change it, get something that will do what you want it to do. If necessary, use more than one package – it saves more than it costs in the long run.

6. Finally, LIMIT YOUR ONLINE TIME TO WHAT YOU KNOW YOU CAN AFFORD. Never dial a number if you don't know where it is. Irish BBS systems aren't always that easy to spot – I spent two hours online to one at one time, and only after I'd logged off did I realise where it was, and how much it cost me to use it.

Observe these six bits of advice, and you'll be able to get lots out of your comms set-up, and still keep your bills at reasonable levels. Anyone that tells you that comms is expensive is a Bill Bloggs type. Be an Arthur Minute, and you'll be able to look people in the eye and say, with confidence, 'Comms is only as expensive as you want it to be.'

Gawd – Very serious for Ol' Batesy, that lot. I make no apologies. But then, sometimes you just have to get serious!! That's all we've room for – I'll be back next month with some more tantalizing titbits from the comms scene – until then, keep those phone lines buzzing! Live long and prosper!

Grand Prix Circuit

Accolade's Grand Prix Circuit is the Formula One racing simulation that whisks you to an exclusive world of power, passion



and performance.

You'll race for the world-renowned teams of McLaren, Ferrari, and Williams on the greatest Grand Prix courses.

Slither through the curves of glamorous Monaco. Blast down the straightaways of Germany. Snarl through the tunnels of



Japan. Compete against a diverse corps of international rivals who seek the same prize—the title of World Driving Champion.

Uninhibited speed. Unchained exhilaration. It can only be found on The Grand Prix Circuit.

Available from all good retailers
For further information write to:
Accolade Europe Ltd.,
Unit 14, 50 Lombard Road,
London SW11

ACCOLADE™
The best in entertainment software.™

SPECTRUM/AMSTRAD
CASSETTE—£9·99 DISK—£16·99



In the aftermath of the new Plus range excitement, the Doc gets down to some serious applications chatter.

Doc'll fix it!

Good morrow, gentle reader – have any of you managed to purchase one of the new machines yet?? Any 464+ owners wishing they could fit a disc drive – fear not, the Doc is here with a fix to the DD1 that will allow you to attach said unit to the back of the new machine. No fix for tape use on the 6128+ yet, but we're working on it!

Before that, though, I gave a couple of quick answers at the end of last month's column that I said we'd cover in more depth this time around, and here they are.

From Mansfield in Nottinghamshire comes this missive:

Dear Sir,

I own an Amstrad 464 with a DMP 2160 Printer, and I have a query. Is there any way possible to utilise the computer/printer into an Answering Machine whereby all messages received are printed directly on to the printer?

Initially I would need a Modem of some description and possibly a Software program to run it, but up to writing to you I have drawn a complete blank from local computer shops. When I ask them is it feasible, they look at me with vacant expressions! I even told them that a onetime friend of mine who used to travel abroad a lot had some sort of arrangement whereby he phoned home, read out his reports etc. and when he returned there they were all done via computer and printer.

I would be very grateful if you in your infinite wisdom and endless knowledge could let me know if it is possible, and then I can either pack the idea up or try and set it up.



The missive is signed Peter Matthews. As I hinted last month, what you describe is almost possible, but not on a machine such as the 464. You describe a system known as the Tonetalker, available on IBM PC compatibles, and, what happens with that is this. The PC is set up with a large hard disc (and yes, I know you can get one for Amstrad machines – I'm waiting patiently (huh!) for one coming from Germany as I write this) and an expansion card that allows speech to be digitised into a file.

The program that controls it all runs in the background, on a processor sharing arrangement, so that a secretary can listen to the speech while she or he (I watch Neighbours too, you know) is clattering away at the wordprocessor. It's nothing more than a computerised dictation machine when it's used like that.

Now, to my knowledge, nobody has come up with an effective time- slicing routine for the CPC range, neither is there an equivalent add-on to the Tone talker on the market, and I don't expect there will be. So, if you really need this

kind of functionality, you'd better get hold of our sister magazine APC and start getting into PC compatibles! Sorry to be the bearer of bad news, but even the CPC has its limitations!

Robot CPCs?

Next up is a letter from Purley Sixth Form College (on headed notepaper, yet):

I am presently doing four "A" levels which include Technology. This course requires a practical project to be designed and made. I have chosen to design and make a computer controlled robot arm that will play board games. I have to make the entire thing myself and this includes interfacing the computer to the robot arm. I Would greatly appreciate it if you could please give me any information on the output/input ports at the rear of my CPC6128 (the expansion and printer ports) along with how to read and alter the signals sent and received from these ports via programming. I own a Z80 machine code assembler (Maxam 1.5) and have been following AJ's machine code course so any machine code listings would also be gratefully accepted.

Owing to the fact that this and the interface has to be built by myself, I cannot use any interfaces on the market so this information would unfortunately be of no use to me. I would however be grateful of any precautions I should take in completing this task.

Whether you are unable to send or publish any information on this subject due to any reason or not, I would appreciate it if you could give me other addresses/telephone numbers/literature to try as these would be most helpful.

The nature of the course includes certain deadlines that I must meet in order to pass. Therefore I wish to state the need for a quick response to this letter. I thank you in anticipation of this.

Well, Peter Wise – it seems you are living up to your name! I suspect that you're likely to be using Leggo Technic in the mock up stages, before you get round to building the final arm, and that should pose no problems for you. The interfacing ought to be a fairly simple task. In essence, you're looking at a straightforward switching arrangement driven by port addresses – in other words, a digital to analogue (or digital) converter. There is a fair number of books around on the subject on interfacing between digital and analogue signals, and amplifying digital switch signals to levels that discreet components can use.

Certain things do spring to mind, though. I would be very tempted to use opto-isolation in this kind of project. The likelihood is that signals outside the computer (and voltage levels) could be dangerous to your CPCs health. Ergo, using opto-isolators in the interface will prevent any chance of injurious voltages blowing your CPC apart.



Second. You mention board games, but you don't say what type. I assume that you're looking at Chess, Othello, that kind of thing. This leads me to believe that we're talking fairly precise three dimensional movement on the arm, governed by stepper motors? What I'm not clear about is whether the program that controls the arm has to have the intelligence to actually play the game (in which case you're talking heavy programming, and yes, lots of machine code to do the trick) or whether human fingers will control the arm from the keyboard by co- ordinates, in which case you might get away with a BASIC program.

Either way, for the information you need on the port addresses and decoding signals, you will need SOFT 968, sadly out of print, but a copy of which I may be able to lend to you. There's also a hardware guide, but I believe that's only available to registered repair shops. Give Amstrad a ring, and beg a copy, on loan if you have to.

And so to the disc drive for a 464+. In last month's review of the range, I said that Amstrad didn't intend for 464+ owners to stick a disc drive on the back of the machine, and, indeed, at first glance, it seems that they've so arranged things that you couldn't do it. However, that isn't the case. The DD1 interface is built with a disc ROM inside it. Now, the new machines also include a disc ROM (in position 7) alongside the rest of the firmware.

The problem lies in both disc ROMs fighting for control when a DD1 is attached to the 464+. The answer, therefore, is to prevent one or the other from working. My good friend Cliff Lawson, exceedingly clever technobod down there in Brentwood, has contributed quite largely to a debate on this in the Micronet news pages, and also on the Amster's Cage, and I'm indebted to him for helping me sort it all out.

The gist of it is this. It would be exceedingly foolhardy to tamper with the ROM in the Burnin Rubber cartridge – damage might easily ensue. However, to disable the on-board ROM in the Disc Interface is simply a matter of removing a diode – D110, as it happens. This particular little component is clearly marked on the circuit board, so it shouldn't be too hard a task to locate it, and either de-solder it (if you're handy with a soldering iron), or attack it with some fine wire cutters, and remove it that way.

If you've only just bought the interface, then, yes, you're likely to invalidate the warranty, but, having said that, they're available at very low prices at the moment, so the investment isn't going to be that great. If you're not sure how to go about the surgery, then either get the unit down to your local repair shop, and tell them what needs removing (a diode-ectomy, perhaps?), or hang on until next month when I hope to be able to give you a pictorial guide to the job (in photos).

And that about winds it up for this month. Keep the letters coming in, and we'll keep on answering them. Also, if you come across any useful bits of info on the new machines, do, please, let me know. Mine have gone back to Amstrad now (sob, sob)! As my bruvver would say, 'Live long and Prosper'.

TOTE

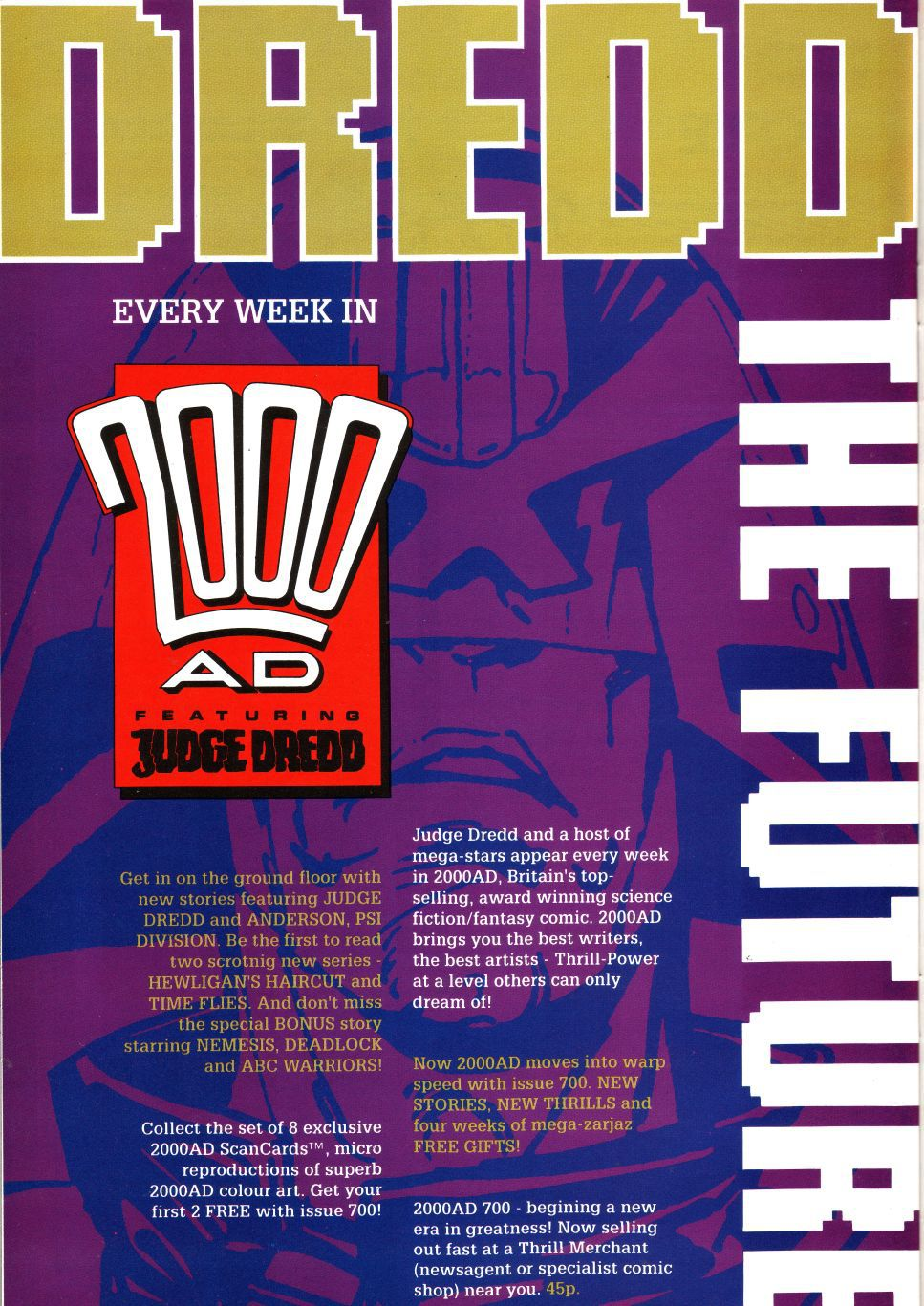
By R.E. Jones

Here's an excellent program which will appeal to fun lovers and serious clubs and charities alike. What you've got is something which will allow you to enter competitors into a contest, be it an egg and spoon race or even a pie eating bash. Ticket prices can be altered and you can even have a flutter on the outcome.



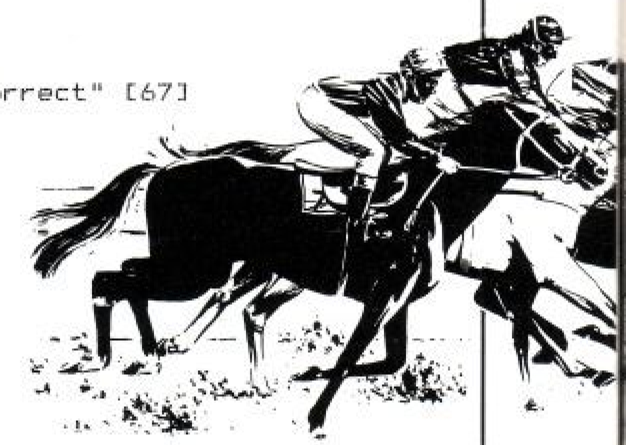
In the event that bad weather should spoil your event, there's even a horse race game included for indoor sport. Just follow the simple instructions and you've got an awful lot wrapped up into one handy program.

```
10 MODE 2:INK 0,11:INK 1,0:BORDER 11:INK 2,0,26:pc1=10:pc2=50:pc3=30:pc4=10:sum=
100  [05]
20 DIM name$(25),n(25):d$="OFF":price=5 [70]
30 CLS:PRINT"                              COMPUTOTE" [32]
40 PRINT"                                 *********":PRINT [A4]
50 PRINT"Computote is a utility to aid fund raising for charities, clubs, PTA's
etc. The program is written in basic so that it may readily be altered to suit i
ndividualrequirements."      [8F]
60 PRINT"The program enables the competitors of a contest to be entered and for
 tickets to be sold (betting) on the outcome of the contest. This can be used th
erefore"  [BF]
70 PRINT"for any type of contest be it an egg and spoon race, cross country run
or even  a pie eating contest." [E1]
80 PRINT:PRINT"In the event that the function suffers from bad weather or, in th
e evening in   the club house, the simple horse race game can be used for fun or
 fund raising." [79]
90 PRINT [2B]
100 PRINT"Following this is the menu which allows the price of the ticket to be
altered,  the percentages for the charity or club and the winners to be set, and
 for the  contestants data to be entered. You need to enter the number [18]
 of contestants";  [18]
110 PRINT"and then the number, colour or title by which they will be known.  Whi
le on the same screen, you can sell tickets against each entry listed by reading
 the      prompt. Item 4 on the menu allows the tickets sales to be di [69]
splayed if required."; [69]
120 PRINT"You can return to this display from the menu at any time to sell more
tickets." [3E]
130 PRINT:PRINT"The program allows for 20 entries but only 8 entries can be used
 for the game." [C7]
140 GOSUB 1370 [8F]
150 '******************************** MENU ********************************** [A
8]
160 CLS:INK 0,25:INK 1,0 [71]
170 LOCATE 1,1:PRINT"                                       Menu"      [D5]
180 PRINT"                                             ----   "     [A4]
190 LOCATE 15,5:PRINT"          1.    Ticket price.    "CHR$(24)price"pence "CH
R$(24)   [C9]
200 LOCATE 15,7:PRINT"          2.    Set Percentages.   " [20]
210 LOCATE 15,9:PRINT"          3.    Input Data." [EB]
220 LOCATE 15,11:PRINT"          4.    Tickets sold display. "CHR$(24)" "d$CHR$
(24)   [AE]
230 LOCATE 15,13:PRINT"          5.    Return to Display."        [B0]
240 LOCATE 15,15:PRINT"          6.    Display Winners."        [44]
250 LOCATE 15,17:PRINT"          7.    Game."                   [B8]
260 LOCATE 15,19:PRINT"          8.    Quit Programme."          [F5]
270 GOSUB 1460:LOCATE 25,25:INPUT "Please make your selection";sel$ [7C]
280 IF sel$<CHR$(49) OR sel$>CHR$(56) THEN 270      [91]
290 sel=VAL(sel$):IF sel<1 OR sel >9 THEN 270 [72]
300 ON sel GOTO 310,1060,330,1470,1590,910,1640,1550        [E5]
310 GOSUB 1460:LOCATE 28,25:INPUT "Enter Price of Ticket";price [71]
320 LOCATE 49,5:PRINT price"pence   ":GOTO 170       [74]
330 '***************************** INPUT ********************************* [A9]
340 CLS:INPUT" Input number of competing components, 8 only if using game";nc%
  [0D]
350 IF nc%<2 OR nc%>20 THEN 340 [AF]
360 FOR x=1 TO nc% [DD]
370 CLS:PRINT"Enter Name, colour or designation of competing component";:PRINT"
No"x;:INPUT;name$(x)    [DA]
380 NEXT [3F]
390 CLS:PRINT "           Entry List                          Ticket Price. "pri
ce" Pence"  [FD]
400 PRINT"--------------------------------------------------------------------------
-----------" [F5]
410 PRINT [25]
420 GOSUB 1490      [B4]
430 '************************* Selection ************************************ [AA
]
440 LOCATE 16,25:INPUT "Please make a Selection or 999 to finish";z [7A]
```


DREDD
THE FUTURE
EVERY WEEK IN
2000 AD
FEATURING
JUDGE DREDD
Get in on the ground floor with new stories featuring JUDGE DREDD and ANDERSON, PSI DIVISION. Be the first to read two scrotnig new series - HEWLIGAN'S HAIRCUT and TIME FLIES. And don't miss the special BONUS story starring NEMESIS, DEADLOCK and ABC WARRIORS!
Collect the set of 8 exclusive 2000AD ScanCards™, micro reproductions of superb 2000AD colour art. Get your first 2 FREE with issue 700!
Judge Dredd and a host of mega-stars appear every week in 2000AD, Britain's top-selling, award winning science fiction/fantasy comic. 2000AD brings you the best writers, the best artists - Thrill-Power at a level others can only dream of!
Now 2000AD moves into warp speed with issue 700. NEW STORIES, NEW THRILLS and four weeks of mega-zarjaz FREE GIFTS!
2000AD 700 - begining a new era in greatness! Now selling out fast at a Thrill Merchant (newsagent or specialist comic shop) near you. 45p.

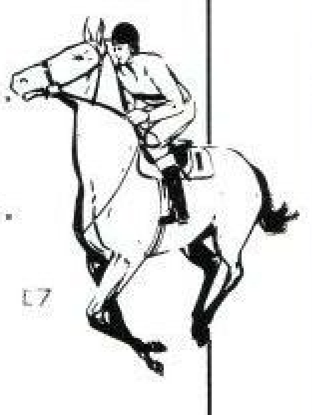
```
450 IF z=999 THEN z=0:GOSUB 2450:GOTO 150      [E1]
460 IF z<1 OR z>nc% THEN LOCATE 56,25:PRINT"        ":GOTO 440                [6
B]
470 GOSUB 1460 [97]
480 LOCATE 25,25:INPUT "How many tickets ";t      [BC]
490 IF d$="ON "THEN LOCATE 55,3:PRINT"Tickets Sold."  [D7]
500 IF z=1 THEN n(1)=n(1)+t     [9A]
510 IF d$="ON "AND n(1) THEN LOCATE 60,5:PRINT n(1)      [84]
520 IF z=2 THEN n(2)=n(2)+t     [D3]
530 IF d$="ON "AND n(2) THEN LOCATE 60,6:PRINT n(2) [F8]
540 IF z=3 THEN n(3)=n(3)+t           [0C]
550 IF d$="ON "AND n(3) THEN LOCATE 60,7:PRINT n(3)     [6C]
560 IF z=4 THEN n(4)=n(4)+t   [45]
570 IF d$="ON "AND n(4) THEN LOCATE 60,8:PRINT n(4)    [E0]
580 IF z=5 THEN n(5)=n(5)+t        [7E]
590 IF d$="ON "AND n(5) THEN LOCATE 60,9:PRINT n(5)    [54]
600 IF z=6 THEN n(6)=n(6)+t [A4]
610 IF d$="ON "AND n(6) THEN LOCATE 60,10:PRINT n(6)  [99]
620 IF z=7 THEN n(7)=n(7)+t      [DD]
630 IF d$="ON "AND n(7) THEN LOCATE 60,11:PRINT n(7)   [0F]
640 IF z=8 THEN n(8)=n(8)+t                  [16]
650 IF d$="ON "AND n(8) THEN LOCATE 60,12:PRINT n(8)       [85]
660 IF z=9 THEN n(9)=n(9)+t [4F]
670 IF d$="ON "AND n(9) THEN LOCATE 60,13:PRINT n(9)  [FB]
680 IF z=10 THEN n(10)=n(10)+t    [83]
690 IF d$="ON "AND n(10) THEN LOCATE 60,14:PRINT n(10) [A7]
700 IF z=11 THEN n(11)=n(11)+t [AF]
710 IF d$="ON "AND n(11) THEN LOCATE 60,15:PRINT n(11)      [0E]
720 IF z=12 THEN n(12)=n(12)+t [EE]
730 IF d$="ON "AND n(12) THEN LOCATE 60,16:PRINT n(12) [88] [88]
740 IF z=13 THEN n(13)=n(13)+t [2D]
750 IF d$="ON "AND n(13) THEN LOCATE 60,17:PRINT n(13) [2]
760 IF z=14 THEN n(14)=n(14)+t     [6C]
770 IF d$="ON "AND n(14) THEN LOCATE 60,18:PRINT n(14) [7C]
780 IF z=15 THEN n(15)=n(15)+t [AB]
790 IF d$="ON "AND n(15) THEN LOCATE 60,19:PRINT n(15) [F6]
800 IF z=16 THEN n(16)=n(16)+t [D7]
810 IF d$="ON "AND n(16) THEN LOCATE 60,20:PRINT n(16) [E2]
820 IF z=17 THEN n(17)=n(17)+t [16]
830 IF d$="ON "AND n(17) THEN LOCATE 60,21:PRINT n(17) [5C]
840 IF z=18 THEN n(18)=n(18)+t [55]
850 IF d$="ON "AND n(18) THEN LOCATE 60,22:PRINT n(18) [D6]
860 IF z=19 THEN n(19)=n(19)+t [94]
870 IF d$="ON "AND n(19) THEN LOCATE 60,23:PRINT n(19) [50]
880 IF z=20 THEN n(20)=n(20)+t [BD]
890 IF d$="ON "AND n(20) THEN LOCATE 60,24:PRINT n(20) [1C]
900 t=0:GOTO 440     [44]
910 '************************** Winners Screen ****************************** [AB
]
920 IF nc%=0 THEN CLS:LOCATE 20,10:PRINT"No contestants have been entered yet.":
GOSUB 1370:GOTO 150 [BE]
930 CLS:GOSUB 1490    [DF]
940 LOCATE 25,25:INPUT"Please Select 1st Place Winner";xx [4E]
950 IF xx<1 OR xx>nc% THEN 940 ELSE GOSUB 1460     [CC]
960 LOCATE 25,25:INPUT"Please Select 2nd Place Winner";yy [A6]
970 IF yy<1 OR yy>nc% THEN 960 ELSE GOSUB 1460          [3C]
980 LOCATE 25,25:INPUT"Please Select 3rd Place Winner";zz [DD]
990 IF zz<1 OR zz>nc% THEN 980       [46]
1000 GOSUB 2450 [8F]
1010 CLS:PRINT:PRINT:PRINT:PRINT"          1st Place.     "name$(xx):LOCATE 55,4:
PRINT USING "       # ##,.##";win1:PRINT:PRINT:PRINT          [31]
1020 PRINT"           2nd PLace.      "name$(yy):LOCATE 55,8:PRINT USING "       # #
#,.##";win2:PRINT:PRINT:PRINT       [36]
1030 PRINT"           3rd Place.      "name$(zz):LOCATE 55,12:PRINT USING "       #
##,.##";win3      [D8]
1040 GOSUB 1370      [9E]
1050 GOTO 150      [91]
1060 '************************ Percentages ******************************  [
93]
1070 CLS:INK 0,14:INK 1,0:BORDER 14:PRINT"                              Percentage
s.":PRINT:PRINT:PRINT:PRINT  [A7]
1080 PRINT"                    House.  "pc1" %":PRINT:PRINT  [22]
1090 PRINT"                    1st.    "pc2" %":PRINT:PRINT    [DD]
1100 PRINT"                    2nd.    "pc3" %":PRINT:PRINT     0]
1110 PRINT"                    3rd.    "pc4" %":PRINT          [E2]
1120 PRINT:PRINT"                       total   "sum" %"    [FD]
1130 GOSUB 1460 [9C]
1140 LOCATE 12,25:INPUT"Change House percentage,Return to pass or 999 to finish"
;p1     [F8]
1150 IF p1=999 THEN 1330 [62]
1160 IF p1=0 THEN 1180        [88]
```

```
1170 pc1=p1:LOCATE 30,6:PRINT pc1          [68]
1180 GOSUB 1460 [AB] [AB]
1190 LOCATE 12,25:INPUT"Change 1st place percentage,Return to pass or 999 to fin
ish";p2    [BA]
1200 IF p2=999 THEN 1330 [5F]
1210 IF p2=0 THEN 1230   [33
1220 pc2=p2:LOCATE 30,9:PRINT pc2          [D4]
1230 GOSUB 1460       [9E]
1240 LOCATE 12,25:INPUT"Change 2nd place percentage,Return to pass or 999 to fin
ish";p3 [5F]
1250 IF p3=999 THEN 1330 [78]
1260 IF p3=0 THEN 1280   [B5]
1270 pc3=p3:LOCATE 30,12:PRINT pc3          [BC]
1280 GOSUB 1460   [AD]
1290 LOCATE 12,25:INPUT"Change 3rd place percentage,Return to pass or 999 to fin
ish";p4 [69]
1300 IF p4=999 THEN 1330 [75]
1310 IF p4=0 THEN 1330          [5D]
1320 pc4=p4:LOCATE 30,15:PRINT pc4          [2C]
1330 sum=pc1+pc2+pc3+pc4:LOCATE 29,18:PRINT sum         [BB]
1340 IF sum<>100 THEN 1430 [BF]
1350 GOSUB 1370          [A7]
1360 GOTO 150 [9]
1370 GOSUB 1460:LOCATE 25,25:PRINT"       Press any key":z$=INKEY$     [B3]
1380 FOR t=1 TO 150:NEXT        [37]
1390 GOSUB 1460:LOCATE 25,25:PRINT"
       " [B8]
1400 FOR t=1 TO 150:NEXT   [21]
1410 IF z$=""THEN 1370        [DF]
1420 RETURN   [69]
1430 GOSUB 1460:LOCATE 20,24:PRINT"Total must be 100% please correct" [67]
1440 GOSUB 1370       [A6]
1450 GOTO 1060 [6B]
1460 LOCATE 10,25: PRINT"
           ":RETURN       [52]
1470 IF d$="OFF" THEN d$="ON ":GOTO 170 [F3]
1480 IF d$="ON " THEN d$="OFF":GOTO 170            [5A]
1490 FOR x=1 TO nc% [58]
1500 IF x>9 THEN 1520 [DA]
1510 PRINT"        "x".          "name$(x):GOTO 1530 [89]
1520 PRINT"       "x".          "name$(x)    [3A]
1530 NEXT        [FF]
1540 RETURN [71]
1550 LOCATE 15,25:PRINT"ARE YOU SURE   ARE YOU SURE   ARE YOU SURE":z$=INKEY$  3
5]
1560 IF z$=""THEN 1550   [EE]
1570 IF z$="y" THEN 1580 ELSE 150 [3B]
1580 CLS:LOCATE 16,12:PRINT"      To resume without loss of data -  goto 80":END
[2C]
1590 CLS:PRINT "          Entry List                          Ticket Price. "pr
ice" Pence"   [F0]
1600 PRINT"-----------------------------------------------------------------------
-------------" [7F]
1610 PRINT    [5C]
1620 GOSUB 1490    [CD]
1630 GOTO 490 [E8]
1640 '***************************** GAME ************************************ [
99]
1650 MODE 1:CLS:INK 0,9:INK 1,0:BORDER 9          [1A]
1660 SYMBOL 240,3,38,31,31,63,112,128,128 [B2]
1670 SYMBOL 241,128,128,128,128,128,128,128,128 [B0]
1680 SYMBOL 243,144,120,252,227,225,124,3,1 [08]
1690 PRINT [74]
1700 FOR a=1 TO 8:PRINT CHR$(a+48);CHR$(240);CHR$(243):PRINT:PRINT:NEXT      [91]
1710 FOR x=1 TO 24:LOCATE 40,x:PRINT CHR$(241):NEXT   [DE]
1720 'FOR l=1 TO 8:LOCATE 1,l:PRINT CHR$(240);CHR$(243):NEXT      [95]
1730 LOCATE 10,25:PRINT"Press any key to start"          [92]
1740 a$=INKEY$ [14]
1750 IF a$="" THEN 1740 [9C]
1760 LOCATE 10,25:PRINT"                         " [55]
1770 h1%=2:h2%=2:h3%=2:h4%=2:h5%=2:h6%=2:h7%=2:h8%=2    [16]
1780 LOCATE h1%,2:PRINT" ":LOCATE h1%+1,2:PRINT CHR$(240);CHR$(243):IF h1%=38 TH
EN 1980 [DD]
1790 LOCATE h2%,5:PRINT" ":LOCATE h2%+1,5:PRINT CHR$(240);CHR$(243):IF h2%=38 TH
EN 1980   [09]
1800 LOCATE h3%,8:PRINT" ":LOCATE h3%+1,8:PRINT CHR$(240);CHR$(243):IF h3%=38 TH
EN 1980       [19]
1810 LOCATE h4%,11:PRINT" ":LOCATE h4%+1,11:PRINT CHR$(240);CHR$(243):IF h4%=38
THEN 1980   [55]
1820 LOCATE h5%,14:PRINT" ":LOCATE h5%+1,14:PRINT CHR$(240);CHR$(243):IF h5%=38
THEN 1980     [8D]
```

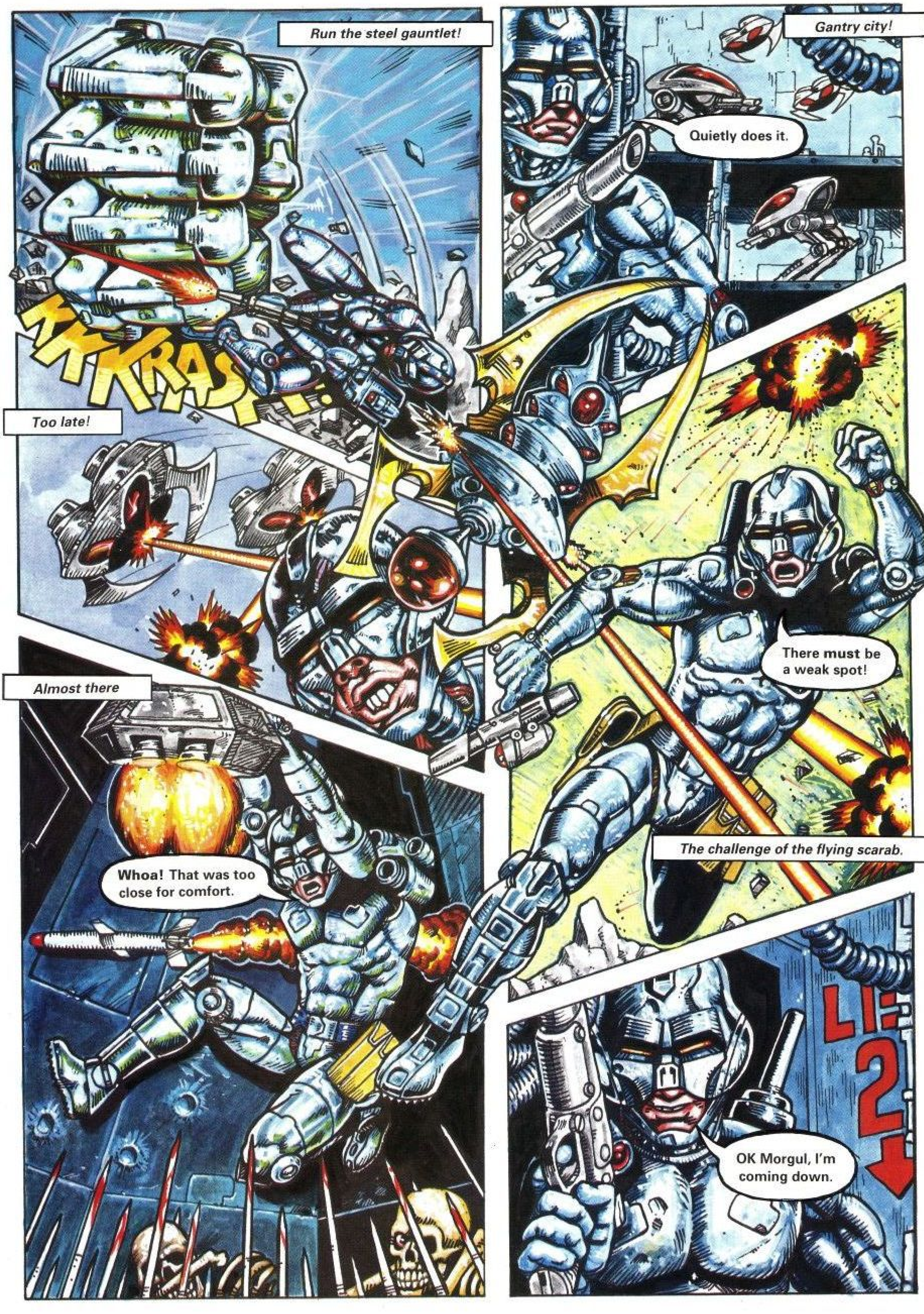


```
1830 LOCATE h6%,17:PRINT" ":LOCATE h6%+1,17:PRINT CHR$(240);CHR$(243):IF h6%=38
THEN 1980    [C5]
1840 LOCATE h7%,20:PRINT" ":LOCATE h7%+1,20:PRINT CHR$(240);CHR$(243):IF h7%=38
THEN 1980       [D6]
1850 LOCATE h8%,23:PRINT" ":LOCATE h8%+1,23:PRINT CHR$(240);CHR$(243):IF h8%=38
THEN 1980     [OE]
1860 RANDOMIZE TIME [55]
1870 b=INT(RND*8+1)   [37]
1880 IF b<1 OR b>8 THEN 1860    [CE]
1890 IF b=1 THEN h1%=h1%+1 [OE]
1900 IF b=2 THEN h2%=h2%+1 [2A]
1910 IF b=3 THEN h3%=h3%+1 [62]
1920 IF b=4 THEN h4%=h4%+1 [9A] [9A]
1930 IF b=5 THEN h5%=h5%+1 [D2]
1940 IF b=6 THEN h6%=h6%+1 [OA]
1950 IF b=7 THEN h7%=h7%+1 [42]
1960 IF b=8 THEN h8%=h8%+1 [7A]
1970 GOTO 1780 [E9]
1980 r(1)=CINT(h1%):r(2)=CINT(h2%):r(3)=CINT(h3%):r(4)=CINT(h4%):r(5)=CINT(h5%):
r(6)=CINT(h6%):r(7)=CINT(h7%):r(8)=CINT(h8%) [BD]
1990 p(1)=r(1):p(2)=r(2):p(3)=r(3):p(4)=r(4):p(5)=r(5):p(6)=r(6):p(7)=r(7):p(8)=
r(8)     [DO]
2000 LOCATE 10,24:PRINT"Press space bar for placings and prices."          [5]
2010 WHILE INKEY(47)=-1:WEND [BE]
2020 MODE 2 [B2]
2030 REM ****************** Sort results ********************************** [C1]
2040 FOR x=1 TO 8-1 [C4]
2050 IF r(x)>r(x+1)THEN 2080 [BB]
2060 NEXT [F]
2070 GOTO 2130     [5A]
2080 f=r(x):r(x)=r(x+1):r(x+1)=f [CF]
2090 x=x-1:IF x<1 THEN x=1:REM back up [9E]
2100 GOTO 2050 55]
2110 GOSUB 2450 [95]
2120 INK 0,22 [EO]
2130 FOR w1=1 TO 8  [BO]
2140 IF p(w1)=r(8) THEN xx=w1:LOCATE 13,3:PRINT"1st PLace.          No." xx;:PRI
NT USING "                # ##,.##";win1     [F3]
2150 NEXT [FE] [FE]
2160 PRINT"                        ----------------------------------":PRINT:PRINT [06
]
2170 y=0 [BA]
2180 FOR w2=1 TO 8     [CA]
2190 IF p(w2)=r(7) THEN y=y+1:yy=w2:y=y+7:LOCATE 13,y:y=y-7:PRINT"2nd PLace.
     No." yy [OB]
2200 NEXT [F1]
2210 PRINT"                        ----------------------------------":PRINT   [C2]
2220 win2=win2/y:FOR y1=1 TO y:LOCATE 51,y1+7:PRINT USING"# ##,.##";win2  [44]
2230 NEXT [FA]
2240 z=0 [B9]
2250 IF r(6)=r(7) THEN 2310 [49]
2260 IF r(5)=r(7) THEN 2340 [8F]
2270 IF r(4)=r(7) THEN 2370 [D5]
2280 FOR w3=1 TO 8     [D7]
2290 IF p(w3)=r(6) THEN z=z+1:zz=w3:z=z+12:LOCATE 13,z:z=z-12:PRINT"3rd PLace.
     No." zz   [CO]
2300 NEXT:GOTO 2390     [03]
2310 FOR w3=1 TO 8 [C4]
2320 IF p(w3)=r(5) THEN z=z+1:zz=w3:z=z+12:LOCATE 13,z:z=z-12:PRINT"3rd PLace.
     No." zz [9C]
2330 NEXT:GOTO 2390 [OC]
2340 FOR w3=1 TO 8 [CD]
2350 IF p(w3)=r(4) THEN z=z+1:zz=w3:z=z+12:LOCATE 13,z:z=z-12:PRINT"3rd PLace.
     No." zz  [94]
2360 NEXT:GOTO 2390    [15]
2370 FOR w3=1 TO 8 [D6]
2380 IF p(w3)=r(3) THEN z=z+1:zz=w3:z=z+12:LOCATE 13,z:z=z-12:PRINT"3rd PLace.
     No." zz    [8C]
2390 PRINT"                        ----------------------------------":PRINT [DC]
2400 win3=win3/z:FOR z1=1 TO z:LOCATE 51,z1+12:PRINT USING"# ##,.##";win3     [7
3]
2410 NEXT [F8]
2420 LOCATE 25,24:PRINT"Press space bar for Menu"      [4E]
2430 WHILE INKEY(47)=-1:WEND  [CC]
2440 GOTO 150 [97]
2450 pool=(n(1)+n(2)+n(3)+n(4)+n(5)+n(6)+n(7)+n(8)+n(9)+n(10)+n(11)+n(12)+n(13)+
n(14)+n(15)+n(16)+n(17)+n(18)+n(19)+n(20))*price     [33]
2460 house=pool*(pc1/100):win1=(pool*(pc2/100)/100):win2=(pool*(pc3/100)/100):wi
n3=(pool*(pc4/100)/100)       [72]
2470 RETURN [79]
```






Follow the furious action as Mr T Takes the battle to Morgul, then go away and do it yourself.
LEVEL ONE
TURRICAN
The wilderness...
Gotta get past these robot sentries...
BLAM
Eat lead, suckers.
Bat attack in the caverns!
Enrichment time.
Watch out for the elements.
AAHH!
Unnh! Rocket emplacement!
Keep your footing at the waterfalls.


Run the steel gauntlet!
Gantry city!
Quietly does it.
Too late!
There **must** be a weak spot!
The challenge of the flying scarab.
Almost there
Whoa! That was too close for comfort.
OK Morgul, I'm coming down.

SOFTWARE CITY

CALL US ON: 0902 25304

ACCESS **VISA**

SOFTWARE CITY
Unit 4, Business Development Centre
21 Temple Street, Wolverhampton WV2 4AN
TEL: (0902) 25304 FAX: (0902) 712751

2 Player Super League	£2.99
3-D Pinball	£2.99
4 Soccer Sim	£2.99
720	£2.99
1942	£2.99
Academy	£2.99
Ace	£1.99
Action Service	NEW £2.99
Airwolf 1 or 2	£1.99
Arkanoid	£2.99
Army Moves	£2.99
Barbarian	£2.99
Baseball	£2.99
Batman	£2.99
Battleships	£1.99
Beyond The Ice Palace	£2.99
Blasteroids	£2.99
Bombjack 1 or 2	£1.99
Bouldedash 4	£2.99
The Boxer	£2.99
Boxing Manager	£2.99
British Super League Football	£2.99
Buggy Boy	£2.99
Captain Blood	£2.99
Champion Water Ski Challenge	£2.99
Championship Golf	NEW £2.99
Championship Sprint	£2.99
Chuckie Egg 1 or 2	£3.99
Classic Punter	£2.99
Classic Trainer	£2.99
Commando	£2.99
Crazy Cars	£2.99
Cricket Captain	£2.99
Cricket Crazy	£1.99
Cricket Int.	£1.99
Crystal Castles	£2.99
Cybernoid	£2.99
Daley Thompsons Decathlon	£2.99
Daley Thompson's Olympic Chall.	£2.99
Daley Thompson Supertest	£2.99
Dan Dare 1 or 2	£2.99
Deadly Evil	NEW £2.99
Dizzy In Fantasy World	£2.99
Dizzy Dice	£1.99
Enduro Racer	£2.99
F.A. Cup	£1.99
Fast Food	£2.99
Football Champions	£2.99
Football Manager	£2.99
Footballer Of The Year	£2.99
Frank Bruno	£1.99
Frankenstein Jnr.	£2.99
Fruit Machine Sim 1 or 2	£2.99
Game Over	£2.99
Gary Linekers Hotshots	£2.99
Gary Linekers Superskills	£2.99
Gary Linekaers Superstar Soccer	£2.99
Gauntlet 1 or 2	£2.99
Graham Gooch	£1.99
Ghosts and Goblins	£2.99
Ghostbusters	£1.99
Great Escape	£2.99
Green Beret	£2.99
Greg Loses Clock	£2.99
Grid Iron 2	£2.99
Hardball	£2.99
Head Over Heels	£2.99
Heavy On The Magick	£1.99
Hong Kong Phooey	NEW £2.99
Hypersports	£2.99
Ikari Warrior	£2.99
Indoor Soccer	£1.99
International Manager	£2.99
Jack The Nipper 1 or 2	£1.99
Jet Set Willy	£1.99
Joe Blade 3	£2.99
Kickstart 2	£1.99
Knightmare	£1.99
Konami Ping Pong	£2.99
Krakout	£2.99
Leaderboard	£2.99
League Challenge	£1.99
Little Puff	£2.99
Live And Let Die	NEW £2.99
Macadam Bumper (Pinball)	NEW £2.99
Manic Miner	£2.99
Matchday 1 or 2	£2.99
Matchpoint	£2.99
Mike Reid's Pop Quiz	£2.99
Monty On The Run	£2.99
Nemesis	NEW £2.99
Nigel Mansell Grand Prix	£2.99
Ollie And Lisa 3	£2.99
On The Bench	£2.99
Operation Gunship	£2.99
Outlander	£2.99
Overlander	£2.99
Paperboy	£2.99
Pinball Sim	£2.99
Powerplay	£1.99
Postman Pat	£1.99
Postman Pat 2	£2.99
Predator	£2.99
Premier 2 Football	£1.99
Prison Riot	NEW £2.99
Pro Boxing Sim	£2.99
Pro Golf (Codemasters)	NEW £2.99
Pub Trivia	£2.99
Quartet	£2.99
Question Of Sport	£2.99
Rally Sim	£2.99
Rambo	£2.99
Rampage	£2.99
Rastan	£2.99
Rastarunner	£2.99
Renegade	£2.99
Rex	£2.99
Roadblasters	£2.99
Rolling Thunder	£2.99
Rugby Boss	£1.99
Rugby Sim	£2.99
Ruff And Ready	£2.99
Run The Gauntlet	NEW £2.99
Rygar	£2.99
Saboteur 1 or 2	£1.99
Salamander	£2.99
Sam Fox Poker	£2.99
Scooby Doo	£1.99
Sidearms	£2.99
Skate Crazy	£2.99
Slapfight	£2.99
Soccer Boss	£1.99
Soccer Director	£2.99
Soccer Q	£2.99
Solomon's Key	£2.99
Space Harrier	£2.99
Spaghetti Western	£2.99
Spindizzy	£2.99
Spooky Castle	£2.99
Spy Hunter	£2.99
Spy V Spy	£2.99
Starwars	NEW £2.99
Steel Eagle	£2.99
Street Fighter	£2.99
Striker	£2.99
Summer Games	£2.99
Super Cycle	£2.99
Super Hang-On	£2.99
Super Nudge 2000	£1.99
Super Stock Cars	£2.99
Tetris	£2.99
Theatre Europe	£2.99
Thundercats	£2.99
Top Gun	£2.99
Trap Door 1 or 2	£1.99
Treasure Island Dizzy	£2.99
U.S. Basketmaster	£2.99
Video Card Arcade	£2.99
Wembley Greyhounds	£2.99
Who Dares Wins 2	£1.99
Wizball	£2.99
Wonderboy	£2.99
World Champion Soccer	£2.99
World Class Leaderboard	£2.99
World Cup 2	£2.99
World Cup Challenge	£2.99
World Games	£2.99
World Soccer	£2.99
World Soccer League	£2.99
Yes Prime Minister	£2.99
Yie Ar Kung Fu	£2.99
Yogi Bear's Great Escape	£2.99

SOFTWARE CITY SPECIALS

Chain Reaction	£0.50
Cholo	£0.99
Deactivators	£0.50
Deep Strike	£0.99
Fighting Soccer	£1.99
Hard Drivin'	£4.99
Hive	£0.50
Kinetik	£0.50
L.E.D. Storm	£2.99
Lee Enfield Amazon Adventure	£2.99
Lee Enfield Tournament Of Death	£2.99
Live And Let Die	£1.99
Mega Apocalypse	£1.99
Moonwalker	£2.99
Myth (DISC)	£4.99
P-47 THunderbolt	£3.99
Passing Shot	£2.99
Question Of Sport	£2.99
Question Of Sport (Disc)	£3.99
Rasputin	£0.50
Real Ghostbusters	£2.99
Shackled	£2.99
Shadowfire (Disc Only)	£2.99
Slaine	£1.99
Starstrike 1 & 2	£1.99
Superwonderboy	£3.99
Tusker	£2.99
Xenophobe	£2.99

FULL PRICE	CASS	DISC
Adidas Championship Football	£8.99	£9.99
Back To the Future 2	NEW £7.50	£9.99
Batman The Movie	£6.99	£9.99
Battle Of The Bulge	NEW £8.99	£9.99
Black Tiger	£6.99	£9.99
Bloodwych	£6.99	£9.99
Cabal	£6.99	£9.99
Carrier Command	£9.99	£11.99
Chase H.Q.	£6.99	£9.99
Crackdown	£7.50	£9.99
Crazy Cars 2	£6.99	N/A
Cricket Master	£6.99	N/A
Dan Dare 3	£6.99	£9.99
Double Dragon 2	£6.99	£9.99
Dragons Of Flame	NEW £7.50	£9.99
The Duel (Test Drive 2)	£6.99	£9.99
Dynasty Wars	£7.50	£9.99
E-Motion	£7.50	£9.99
Emlyn Hughes	£6.99	£9.99
Escape Planet Robot Monsters	£6.99	£9.99
Fiendish Freddy	£6.99	£9.99
Fighter Bomber	£9.99	£13.99
Football Director	£6.99	N/A
Football Director 2 (128k)	N/A	£13.99
Football Manager World Cup Ed	£6.99	£9.99
Football Manager 2 + Expansion	£6.99	£9.99
Ghouls And Ghosts	£6.99	£9.99
Gunship	£9.99	£13.99
Hammerfist	£6.99	£9.99
Heavy Metal	£6.99	£9.99
Hostages	NEW £6.99	£9.99
Indiana Jones Last Crusade	£6.99	£9.99
International 3-D Tennis	£6.99	£9.99
Kick Off	£6.99	£9.99
Klax	£6.99	£9.99
Lazer Squad	£6.99	N/A
Lords Of Chaos	NEW £6.99	£9.99
Manchester Unt	£6.99	£9.99
Microprose Soccer	£9.99	£13.99
New Zealand Story	£6.99	£9.99
Operation Thunderbolt	£6.99	£9.99
Oriental Games	NEW £9.99	£13.99
Pipemania	£6.99	£9.99
Pro Tennis Tournament	£6.99	£11.99
Rainbow Island	£6.99	£9.99
Rick Dangerous	£6.99	9.99
Robocop	£6.99	£9.99
Shadow Warriors	£6.99	£9.99
Starglider 2	£9.99	£13.99
Star Wars Trilogy	£8.99	£13.99
Strider	£6.99	£9.99
Stunt Car	£6.99	£9.99
Tie Break	NEW £6.99	£9.99
Tolkein Trilogy	£8.99	£11.99
Tracksuit Manager	£6.99	N/A
Treble Champions	£6.99	N/A
Turbo Outrun	£6.99	£9.99
Turrican	£6.99	£9.99
The Untouchables	£6.99	£9.99
Vendetta	£6.99	£9.99
Vulcan	£6.99	N/A
World Boxing Manager	£6.99	N/A
Zombie	£6.99	£9.99

COMPILATIONS

HEROES
Barbarian 2, Running Man, Star Wars & Licence To Kill
CASS £9.99 DISC £13.99

CECCO COLLECTION
Stormlord, Exolon, Cybernoid 1 & 2
CASS £8.99 DISC £11.99

QUATTRO POWER
Moto Cross Sim, Twin Turbo V8, Powerboat Racing & ATV Sim
CASS £2.99

QUATTRO ADVENTURE
Dizzy, Ghost Hunters, Super Robin Hood & Vampire
CASS £2.99

WORLD CUP COMPILATION
Kick Off, Gary Linekers Hotshots & Tracksuit Manager
CASS £8.99

COMPLETE GAMES CENTRE
Brian Clough's Football Fortunes, Wizard's Lair, Hi Q Quizz, Ice Temple, Steve Davis Snooker, Wolfpack, Syntax, Castle Blackstar, Pool & Pinball
CASS £8.99

QUATTRO SPORTS
Pro Snooker, Grand Prix Sim, Pro Ski and BMX Sim
CASS £2.99

THE BIZ
R-Type, Operation Wolf, Double Dragon Batman The Caped Crusader
CASS £9.99

MEGA MIX
Operation Wolf, Barbarian 2, Dragon Ninja & Real Ghostbusters
£9.99

WINNERS
Indiana Jones Temple Of Doom, Blasteroids, Led Storm, Thunderblade, Imp Mission 2
CASS £9.99 DISC £13.99

100% DYNAMITE
Afterburner, Last Ninja 2, WEC Le Mans Double Dragon
CASS £9.99

TAITO COIN OPS
Rastan, Flying Shark, Arkanoid 1 and 2, Slapfight Bubble Bobble, Renegade and Legend Of Kage
CASS £8.99

IN CROWD
Karnov, Gryzor, Barbarian, Crazy Cars, Predator, Combat School, Platoon and Target Renegade
CASS £9.99

SUPREME CHALLENGE SOCCER SPECTACULAR
Peter Beardsley's Int. Football, Soccer Supremo, Football Manager, World Champions and Peter Shilton's Handball Maradona
CASS £4.99

SUPREME CHALLENGE
Elite, Starglider, Ace 2, Sentinel and Tetris
CASS £5.50

GAME SET AND MATCH 2
Match Day 2, Superbowl, Winter Olympiad, Nick Faldo, Championship Sprint, Track and Field, Steve Davis Snooker & Super Hang On
CASS £8.99 DISC £11.99

COIN OP HITS
Outrun, Road Blasters, Spy Hunter, Thunderblade & Bionic Commando
CASS £9.99 DISC £13.99

GIANTS
Rolling Thunder, Gauntlet 2, 720, Outrun California Games
CASS £9.99 DISC £13.99

SUMMERTIME SPECIAL
Solomons Key, Bravestarr, Captain America, Trantor, World Class Leaderboard & Rygar
CASS £5.50

THRILLTIME GOLD 1
Paperboy, Ghosts and Goblins, Bombjack, Batty & Turbo Esprit
CASS £6.99

THRILLTIME GOLD 2
Airwolf, Scooby Doo, Battleships, Saboteur & Frank Bruno
CASS £6.99

THRILLTIME GOLD 3
Commando, 1942, Spitfire, Combat Lynx, Deep Strike
CASS £6.99

THRILLTIME PLAT 1
Buggy Boy, Space Harrier, Live And Let Die, Overlander, Dragon's Lair, Thundercats, Beyond The Ice Palace, Great Gurianos, Hopping Mad & Ikari Warriors
CASS £8.99 DISC £13.99

BLANK 3" DISCS AMSOFT/MAXELL

1	£2.75
5	£12.99
10	£22.99

Multiface 2
(Amstrad 464, 664 & 6128) **£46.99**

ORDER FORM AND INFORMATION

All orders sent <u>FIRST CLASS</u> subject to availability. Just fill in the coupon and send it to: Software City, dept. A.C.U. Lichfield Passage, Wolverhampton, WV1 1DZ

ORDER FORM (Block Capitals)

NAME: ____________

ADDRESS: ____________

POSTCODE: ________ TEL: ________

Name of Game	Computer	Value
	Postage	
	TOTAL	

POSTAGE RATES: Please add 50p for post & packaging on all orders under £5. Overseas add £1.50 per item.
PAYING BY CHEQUE: Cheques payable to **Software City**

Card Type ________
Expiry date ________

Signature ________ Date ________

European Orders Mastercard

QUESTION OF SPORT DISC ONLY £4.99

TURBOSOFT

LASER SQUAD CASS £4.99 DISC £8.99

SPECIALS CASSETTE

	RRP	SRP
A.P.B.	9.99	4.99
Animals Of Rome	12.99	2.99
Bards Tale 1		2.99
Big Sleaze	9.99	1.99
Blasteroids	9.99	1.99
Bob's Full House	9.99	3.99
Brian Cloughs Football Fortunes	14.95	4.99
Bubble Ghost	9.95	2.99
Cholo	14.99	1.99
Dragon Spirit	9.99	3.99
Elite	14.95	3.99
Fighter Pilot	9.99	3.99
Fernandez Must Die	9.95	3.99
Football Manager	9.95	3.99
F-15 Strike Eagle	9.95	5.99
Galaxy Force	9.99	1.99
Hunt for Red October	14.95	6.99
Mr Heli	9.99	4.99
Murder on the AStlantic	9.99	1.99
Nebulus	9.99	3.99
P-47 Thunderbolt	9.99	4.99
Pacific	9.99	2.99
Pacland	9.95	4.99
Pacmania	9.95	4.99
Passing Shot	9.95	3.99
Running Man	9.95	3.99
Shinobi	9.95	4.99
Silent Service	9.95	5.99
Super Scramble Simulator	9.95	3.99
Time and Magik	9.95	4.99
Trivial Pursuits	9.95	5.99
Trivial Pursuits New Beginning	9.99	4.99
Vindicators	9.99	3.99
Warlock	9.99	1.99
Xybots	9.99	3.99

Game Set & Match 2
Only £7.99 Disc £12.50
Matchday II, Ian Bothams Test Match, Basket Master, Super Hang On, Track 'n' Field, Superbowl, Winter Olympiad, Steve Davis Snooker, Nick Faldo's

CECCO COLLECTION
Cass £8.99 Disc £12.99
Exolon, Cybernoid II, Cybernoid, Stormlord

IN CROWD
ONLY £10.99,
Barbarian, Gryzor, Crazy Cars, Predator, Karnov, Combat School, Target Renegade, Platoon

TATIO COIN OP
ONLY £8.99
Rastan, Flying Shark, Bubble Bobble, Arkanoid, Slapfight, Arkanoid II, Renegade, Legend of Kage

SUPREME CHALLENGE
ONLY £4.99
DISC £10.99
Elite, Ace, Sentinel, Starglider, Tetris

SOCCER SPECTACULAR
Only £4.99 Disc £10.99
Football Manager, Peter Beardsley's Soccer, World Champions, Handball Maradonna, Soccer Supremo

MEGA MIX
CASS ONLY £9.99
Barbarian II, Dragon Ninja, Operation Wolf, The Real Ghostbusters.

FLIGHT ACE
CASS ONLY £5.99
A.T.C., ACE, A.T.F., Spitfire 40, Tomahawk, Strike Force Harrier

30 RED HOT HITS
ONLY £6.99
Ghostbusters, F.A. Cup, Agent X2, Kane, LA Swat, Ninja Master, Rasputin Ollie and Lissa, Ricochet, Zolyx, Way of Exp Fist, Dan Dare, Formula 1 Simulator, Brian Jack's Superstar Challenge, Tau Ceti, Park Patrol, Thrust, Harvey Headbanger, War Cars, Tarzan, Ninja Hamster, Enlightenment, Druid II, The Boggit, Mystery of the Nile, Mega Apocalypse, Endurance, Activatol, Catch 23, Dark Sceptre

AMSTRAD TOP 30 HITS

	CASS	DISC
Batman the Movie	6.99	10.99
Bloodwych	6.99	10.99
Bomber	10.99	13.99
Castle Master	6.99	10.99
Chase HQ	6.99	10.99
Cyberball	5.99	9.99
Dr Dooms Revenge	5.99	9.99
Double Dragon II	6.99	10.99
Dynasty Wars	6.99	10.99
Hard Drivin	6.99	10.99
Italy 1990	8.99	11.99
International 3D Tennis	6.99	10.99
Klax	5.99	9.99
Laser Squad Exp Kit	3.99	5.99
Man United	5.99	9.99
New Zealand Story	6.99	10.99
Pipemania	5.99	9.99
Operation Thunderbolt	6.99	10.99
P-47 Thunderbolt	6.99	10.99
Rainbow Islands	6.99	10.99
Robocop	6.99	10.99
Quarterback	10.99	13.99
Shadow Warrior	6.99	10.99
Southern Belle/Evening Star	9.99	12.99
Stunt Car Racer	6.99	10.99
Test Drive II	6.99	12.99
The Cycles	6.99	10.99
Vendetta	6.99	10.99
X-Out	6.99	10.99
World Championship Boxing	6.99	10.99

AMSTRAD CLASSICS

	CASS	DISC
Altered Beast	4.99	7.99
Airborne Ranger	10.99	13.99
Cabal	6.99	10.99
Carrier Command (Disc 6128)	N/A	11.99
Chuck Yeagers (AFT)	6.99	10.99
Colossus Bridge	8.99	11.99
Colossus Chess 4	7.99	11.99
Continental Circus	4.99	10.99
Cricket Master	6.99	10.99
Dragon Ninja	6.99	10.99
Emlyn Hughes Int Soccer	6.99	10.99
Football Director	6.99	N/A
Football Director II	N/A	13.99
Forgotten Worlds	6.99	10.99
Gazzas Soccer	5.99	9.99
Ghouls & Ghosts	6.99	10.99
Ghostbusters II	7.99	10.99
Gunship	10.99	13.99
Heroes of the Lance	7.99	14.99
Jack Nicklaus Golf	6.99	12.99
Kick Off	4.99	7.99
Microprose Soccer	10.99	12.99
Myth	4.99	7.99
Operation Wolf	6.99	10.99
Powerdrift	4.99	7.99
Strider	6.99	10.99
Super Wonderboy	4.99	7.99
Tank Attack	9.99	12.99
The National	6.99	N/A
Treble Champions	6.99	10.99
Tracksuit Manager	6.99	N/A
Turbo Outrun	6.99	10.99
Tusker	4.99	7.99
War in Middle Earth	6.99	10.99

FORTHCOMING ATTRACTIONS

	CASS	DISC
Adidas Golden Shoe	6.99	10.99
After the War	6.99	10.99
Atomic Robokid	6.99	10.99
Back To The Future	6.99	10.99
Beach Volley	6.99	10.99
Dark Century	5.99	9.99
Defenders Of Earth	6.99	10.99
Driving Force	6.99	10.99
European Super League	6.99	10.99
F-16 Combat Pilot	10.99	13.99
Flimbos Quest	6.99	10.99
Golden Axe	6.99	10.99
Hammerfist	6.99	10.99
Hot Rod	6.99	10.99
Iron Lord	6.99	10.99
Kick Off 2	6.99	10.99
Ninja Spirit	6.99	10.99
Midnight Resistence	6.99	10.99
Onslaught	6.99	10.99
Oriental Games	6.99	10.99
Pinball Magic	6.99	10.99
Player Manager	6.99	10.99
Puffys Saga	6.99	10.99
Rick Dangerous 2	6.99	10.99
Satan	6.99	10.99
Sly Spy	6.99	10.99
Snow Strike	6.99	10.99
Storm Lord 2	6.99	10.99
The Champ	6.99	10.99
Tiebreak	6.99	10.99
Twin World	6.99	10.99
Welltris	6.99	10.99
Zombi	6.99	10.99

Please note that the majority of the forthcoming attractions are not released at the time of going to press. These will be despatched within 24 hours of release subject to availability.

UTILITIES

	CASS	DISC
Mini Office II	10.99	14.99
Protext	14.99	19.99
Hisoft Pascal 80	N/A	37.99
Hisoft C	37.99	37.999
Hisoft Denpac 80	N/A	37.99
Hisoft Knife Plus	N/A	14.99
Hisoft Forth	N/A	14.99
Tascopy	10.99	10.99
Tasword 464/6128	18.99	22.99
Prospell	N/A	18.99
Masterfile 3	N/A	29.99
Tas-Spell	N/A	14.99

EDUCATIONAL

	CASS	DISC
Answer Back Junior	7.50	10.99
Better Maths 12-16	8.99	13.99
Better Spelling 9-14	8.99	13.99
Fun School II Under 6	6.99	9.50
Fun School II 6-8	6.99	9.50
Fun School II *+	6.99	9.50
French Mistress A+B	N/A	15.99
General Science	N/A	7.99
Magic Maths 4-8	8.99	13.99
Spelling	N/A	7.99
Three Bears	N/A	14.50
World Wise	7.99	10.99

LOOK! MEGA OFFER LOOK!

For every £10 spent you can choose a free game from the list below
CASSETTE ONLY
Mr Weems and the She Vampires, Mega Apocolypse, Dandy, High Frontier, Hijack, Sailing, Split Personalities, Fury, Prodigy, Vixen, Mandragore, Warlock, Ball Blazer, Big Sleaze, Ball Breaker, Death or Glory, Guadal Canal.

All AVAILABLE @ £1.99 EACH

DISC SPECIALS

	CASS	DISC
Animals Of Rome	17.99	4.99
Afterburner	14.99	5.99
Bards Tale I	14.99	6.99
Blasteroids	14.99	3.99
Beyond The Ice Palace	14.99	3.99
Colossus Mah Jong	14.99	6.99
Dark Sceptre	14.99	3.99
Fair Means or Foul	14.99	3.99
Firezone	14.99	4.99
F/Ball Manager II + Exp Kit	14.99	8.99
Cyrus 2 Chess	14.99	6.99
Galaxy Force	14.99	2.99
Gryzor	14.99	4.99
Hunt for Red October	19.99	8.99
Hopping Mad	14.99	5.99
Ikari Warriors	14.99	6.99
Knightmare	14.99	4.99
Mindfighter	17.99	4.99
Mr Heli	14.99	6.99
Pegasus Bridge	14.99	6.99
Passing Shot	14.99	3.99
Led Storm	14.99	2.99
Pacland	14.99	6.99
Running Man	14.99	5.99
Sentinel	14.99	4.99
Shinobi	14.99	7.99
Strike Force Harrier	14.99	7.99
The Train	14.99	3.99
Time and Magik	14.99	9.99
Thundercats	14.99	4.99
Vindicators	14.95	5.99
Pacmania	14.99	6.99

MIND STRETCHERS
Cass or Disc
£13.99
Monopoly
Scrabble
Cluedo

MAGNIFICENT 7
Only £6.50 Disc £13.95
Head Over Heals, Cobra & Arkanoid, Short Circuit & Wizball, Frankie Goes to Hollywood, Great Escape & Yie Ar Kung Fu

WORLD CUP 90 COMPILATION
£8.99 £11.99
Kick Off
Tracksuit Manager
Gary Linekars Soccer

THE BIZ
Cass Only
£10.99
Batman Caped Crusader, R-Type, Operation Wolf, Double Dragon

COMPUTER HITS VOL 5
ONLY £4.99 DISC £10.99
Dark Sceptre, Tarzan, Catch 23, Mystery of the Nile, Endurance, Mega Apocalypse, Ninja Hampster, Activator, The Boggit, Druid II

DYNAMITE
CASS ONLY £9.99
Afterburner, Last Ninja II, WEC Le Mans, Double Dragon

TOLKIEN'S TRILOGY
Only 8.99 Disc £11.99
The Hobbit
Lord of the Rings
Shadows of Mordor

LEADERBOARD PAR 3
Only £9.99 Disc £13.99
Leaderboard, Leaderboard Tournament, World Class Leaderboard

WINNERS
ONLY £10.99
DISC £14.99
Thunderblade, Led Storm, Indy Jones and Temple of Doom, Blasteroids, Impossible Mission II

COIN OP HITS
ONLY £10.99
DISC £14.99
Outrun, Thunderblade, Road Blasters, Spy Hunter, Bionic Commando

41 SOUTH STREET, LEIGHTON BUZZARD, BEDS, LU7 8NT TEL: 0525 377974 FAX: 0525 852278

ORDER FORM

Please supply me with the following for

Computer ....

Titles	Price

DATE: ....
NAME: ....
ADDRESS: ....
....
....
.................Post Code.................
TEL: ....

AMSTRAD COMPUTER, NOVEMBER '90

Please make cheques & PO payable to ***Turbosoft***

Orders under £5 please add 50p per item. Over £5 p&p ***FREE*** *in UK. Elsewhere please add £1.50 per item.*
N.B. Please state clearly mode of computer & also cassette or disc when ordering

Citizen's success was based on the 120D printer. Now four years later, Andrew Banner reviews it's new counterpart; the 124D.



Big Brother

Amstrad's philosophy used to be make 'em cheap, sell 'em cheap regardless of quality or reliability. Then along came the Amstrad CPC computers, and (to my mind) the philosophy changed. The computers provided a reliable, quality alternative to the C64, Spectrum, Atari 8-bit and a few other machines that never actually made it. The CPC quickly became an enthusiast's machine as many users discovered it's talents. Amstrad particularly enjoyed the interest gathered by the standard Centronics interface which is an integral part of the unit (something which no other computer at that time had). The CPC was not a games machine, it was used seriously. But after spending the best part of £500 on the computer, proud new owners were left with little with which to buy a printer or any other device.

Now Citizen have come up with the answer to the problem. The company famous for watches has developed a cheap 80 column 24-pin printer that'll knock spots off the competition and won't punch holes in your bank account.

Citizen have been producing top quality printers for some years now. The company's success began with the 120D; four years ago this printer sold in droves. Most serious home computer owners had a printer and a great deal owned the 120D. This low cost 9-pin found it's way into education as well with ILEA buying large quantities to stock the London schools.

Now the same company that brought you that successful printer has done it again with the 124D. With a price tag of just £270 (plus VAT), the 124D hits the high street as one of the cheapest 24-pin printers around. With all the major computer suppliers attempting to undercut each other, £270 plus VAT will more than likely make the end user price something like £250 inclusive, if not less.

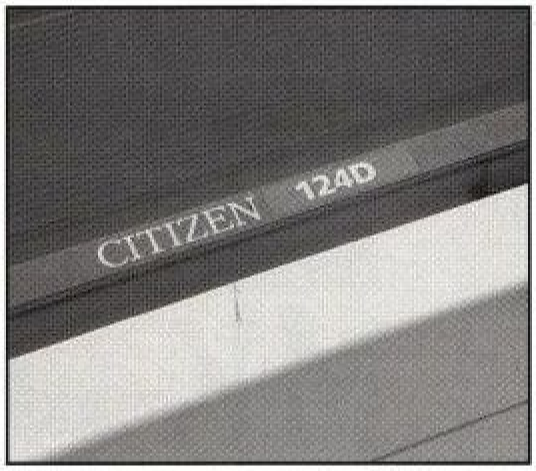
Now, to be fair, two hundred and seventy quid is still a lot of money, but not when you consider to the cost of comparative printers. Also in the interests of fairness, the 124D is nothing special. It's features are limited and it's not on par with a Lister 7-litre MK3 (which incidently has a 0-60 acceleration rate of just 4.5 seconds!). In fact it's really quite slow at 144 characters per second in draft mode. There are two near letter quality modes (NLQ); Times Roman and Courier. The 124D will handle these fonts up to 48 characters per second and it's enhanced Citizen command set also allows it to print in the usual italic, condensed, emphasised and double-strike styles and the more unusual shadow print, outline or even outline with a shadow, underline and overscore and even reverse (white on black) printing.

The style of the 124D may look familiar to you. Well it will do if you read the Swift 9 review a few months back anyway. Yes, you guessed it, the 124D is housed in a Citizen Swift case. To this end, it is substantially cheaper for Citizen to produce the printer as the company will not have to waste money making a new mould. And why not? The case is elegant, well designed and practical. It helped the Swift 24 walk

away with a few awards so why not use it again.

Because it's the same case, many of the Swift series features are included such as paper parking with a short tearoff function. Looking at the printer, I discovered a bottom paper aperture that was undocumented in the ridiculously shaped user's manual. This hole is simply there because it's a Swift case – it serves no purpose as the 124D is not capable of accepting bottom fed paper. Neither is it able to accept continuous, tractor feed sheets using the pull tractor method. Form paper must be fed from behind onto the push tractor.

The advantage of using a push tractor over a pull tractor is that little paper is wasted and that paper parking can be put to use. However, push tractors often snag up on thicker sheets such as labels and this is where a pull device comes in. Unfortunately, the 124D will not allow you to pull paper through the machine. However, after quite extensive testing, I found the push motion to be very effective and even with labels



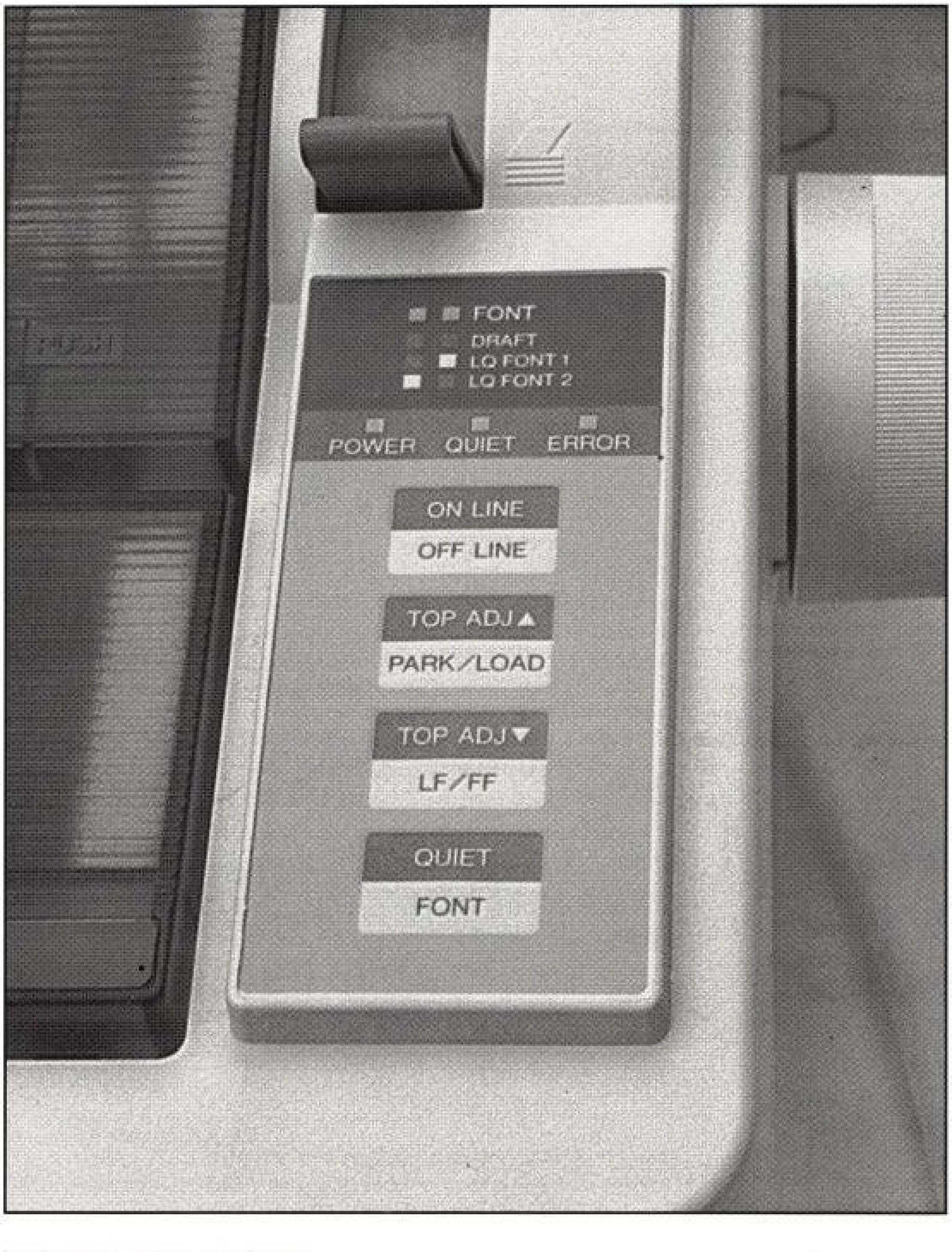
refused to misfeed and waste paper.

Controlling the printer is very easy. A simple touch pad panel on the front of the printer allows you to change font, adjust the top loading position of the paper, park and load sheets and turn the printer on and off line. Further printer controls are located under a removable cover at the rear. These are the printers DIP switches and these control the international character set as well as the emulation mode of the machine.

Table of comparable printers

MODEL	PRICE	PRINTSPEED DRAFT/NLQ	COLOUR	No.OF PINS
Citizen 124D	£270	120/40	No	24
Citizen Swift 9	£269	213/40	Option	9
Star LC10mkII	£229	180/45	No	9
Panasonic KX-P1124	£399	192/38	No	24
Citizen Swift 24	£389	160/53	Option	24
Amstrad LQ3500di	£249	135/45	No	24

Prices do not include VAT.



The Citizen will emulate an Epsom LQ or an IBM Proprinter. Both emulations can be selected from the DIP switches or alternatively, you can issue a software command to temporarily change mode. Likewise, you can issue commands to change font, lock the font, set the type style (eg. pica, elite or condensed) and even set zeros to be slashed or open.

Supplied with a Centronics interface as standard, the 124D has a number of additional options. A user installable RS232 serial interface costs just £30 while a specially designed printer stand will set you back just £23 and an additional 32K buffer expansion a mere £12. If you intend to do a lot of single sheet work, the 124D has complimentary sheet feeders. An automatic cut sheet feeder costs £84 while a semi automatic unit retails at £40.

Made up North at Citizen's Scunthorpe factory, the 124D is backed up by Citizen's unique two year warranty. I don't know about you, but in my experience of computer equipment and the extensive use I put it to, a two year guarantee is a godsend.

Still, the Citizen 124D, although nothing special, is a good printer. It's not brimming with features but then again it's not lacking either. The print quality is outstanding for a unit costing so little and it's a recommended purchase for anyone wanting power without the price (wasn 't that Atari's logo a while back? Ed).

Play time with auntie

Get a grip with auntie John's step by step guide to game making.

How are you doing, machine code fans? Have you been having fun with the Z80? Good, glad to hear it! Me too!

One of the reasons you may have for learning machine code is the deep desire to write your own action-packed arcade games on the CPC. There is absolutely nothing wrong with this – it is a very commendable way of using your new found skills. Nothing tests a programmer's skill more than writing a challenging, enjoyable and successful game. Unless you count making lots of money out of writing such a game.



If you are thinking of writing the next chart buster, you must remember to spend a great deal of time with the graphics. The graphics are the most important part of a game, because if it doesn't look good no one will want to go near it, never mind have a go. The gameplay may be superb, the sound effects may be sensational, but if the player's spaceship is a capital letter A and the aliens lower case letter p's, then the game is a loser.

(Unless of course you happen to be programming a ZX81, where the lack of graphics means you do indeed have to make creative use of the character set).

The new CPC range just announced (don't they look lovely!) pay even more attention to graphics by redesigning the screen display hardware to provide more colours and "sprites". Sprites are graphical shapes that the hardware of the computer handles itself – wonderful stuff that makes games so much easier.

But how does this all fit into out vast machine code plan? Does the firmware have a routine like:

Address: & BEDO
Input: Star System, Nastiness quotient
Output: Horribly beweaponed alien fight craft
Output: Causes a fleet of flying saucers to swoop down the screen, dropping bombs and generally making a nuisance of themselves (corrupts the BC registers)

Unfortunately, the answer is no. There is no such firmware call, and so we will have to construct our own code from what actually exists.

As you probably know by now, the number of characters you can fit on one screen line depends on the screen Mode you have chosen. for example, in Mode 1 you can have 40 characters across the screen, whereas in Mode 2 you can have up to 80.

Now imagine that we have a Mode 1 screen set-up, all ready to go. In our hypothetical game, a small ball is going to bounce around the screen. If the ball was a standard character, like a letter A for example, then we can move the ball anywhere in a grid of 40 by 25 places.

This kind of movement can lead to the graphics appearing a bit juddery, because the amount the ball moves is equivalent to its own size.

If you don't believe me, type in listing number one into your assembler and run it. Hardly state of the art, is it?

It works by drawing a ball on the screen (well, ok, it's a star) and then erasing it by drawing a space over the top of it. By performing a call to Frame (see last month's issue to see what this does) we can get the illusion of movement.

The program needs four co-ordinates: two to hold the ball's X, Y position on the screen, and two to hold the direction values. For example, when the program starts, the X co-ordinate is 1, and the X direction is also 1. The program adds the direction onto the co-ordinate, and then checks to see if the ball has reached the edge of the screen.

If it has, the direction is made the negative of whatever it was: in other words, if it was 1 it becomes -1, and if it was -1 it becomes 1. This is achieved by some cunning binary maths – don't worry if you can't understand it, we'll come back to it soon.

You'll notice that I am only changing the X co-ordinates in this program. It will be a good exercise for you to update the program to include the Y co-




```
        call EraseBall
        call MoveBall

                ld a.,47
                call TestKey
                jr z, loop
                ret

MoveBall
                ld a, (ballx)
                ld b,a
                ld a, (dx)
                add b
                ld 9ballx), a
                cp 1
                jrz, boing
                cp 40
                ret nz

                boing
                ld a,(dx)
                xor 255
                ld (dx), a
                ret

PrintBall
                ld a, (ballx)
                ld h,a
                ld a,(bally)
                ld l,a
                call Locate
                ld a,42
                call PrintChar
                ret

EraseBall
                ld a,(ballx)
                ld h,a
                ld a,(bally)
                ld l,a
                call Locate
                ld a,32
                call PrintChar
                ballx db 1
                bally db 2
                dx db 1
                dy db 1
```

ordinates. If you do, the star will bounce around the screen in a very Pong-like way. Remember that the height of the screen is not the same as the width, and so you'll need to change the checking value.

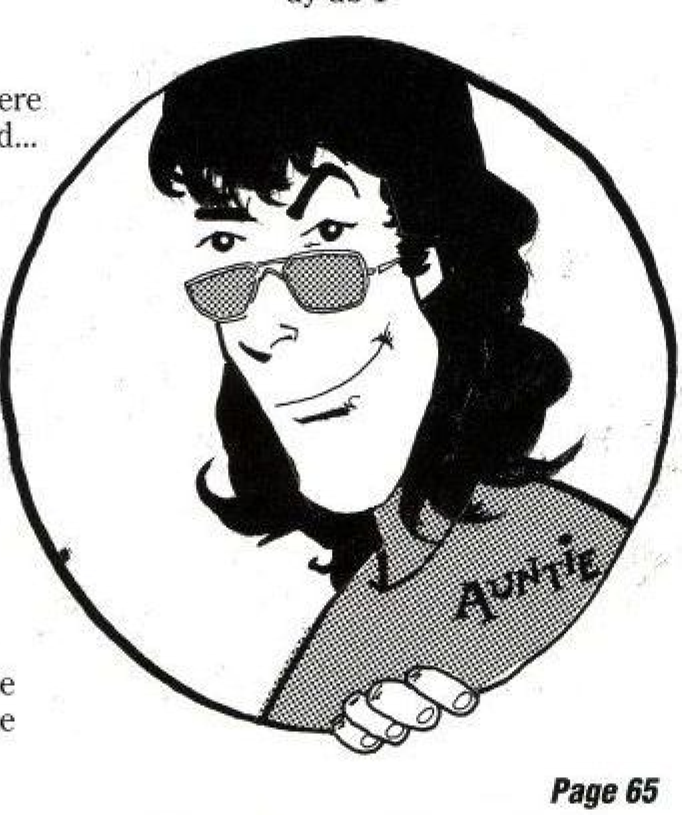
The solution is to move the ball in much finer steps: if possible we would like to move it pixel by pixel. Why a pixel's width? Well this is the smallest possible bit that can be displayed on-screen. We simply couldn't move the ball any more smoothly.

And guess what? Yup, we'll look at a program to do it next month. That is assuming I make it back from touring around Wales on my motorbike safe and sound. Bearing in mind that I fell off it whilst I was in the driveway, there doesn't seem much hope I'm afraid...

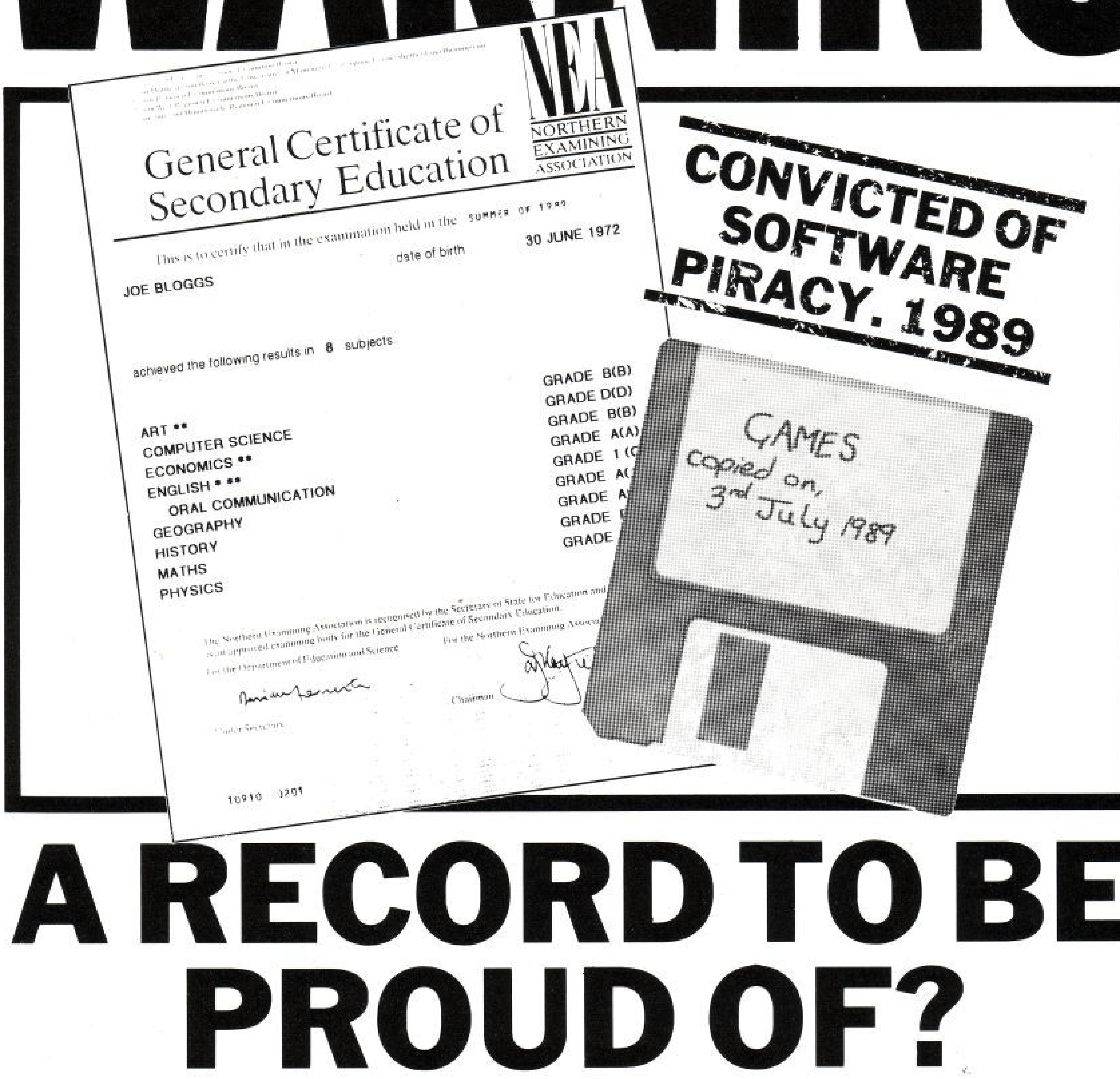
Listing

```
org &8000
Mode equ &BC0E
PrintChar equ &BB5A
Locate equ &BB75
TestKey equ &BB1E
Frame equ &BD19

ld a,1
call Mode
loop
        call PrintBall
        call Frame:call Frame
        call Frame:call Frame
```



WARNING



A RECORD TO BE PROUD OF?

If you pirate software you are a thief. Thieves will be prosecuted

THIS CAMPAIGN IS ORGANISED BY
ELSPA
EUROPEAN LEISURE SOFTWARE PUBLISHERS ASSOCIATION

Any information on piracy should be passed to The Federation Against Software Theft. Telephone 01-240 6756

PIRACY IS THEFT

Over 75% of all information we receive from the outside world comes through our sense of sight so it is hardly surprising that computer graphics tend to dominate computer advertisements. But what is a missile exploding without a bang and what is a flight simulator or powerboat race without the whine of the engines? Ian Waugh guides you through the process from tyro to master Amstrad muso in this new series.

THE SOUND OF MUSIC

Music and sound have a greater effect upon us than you may realise. It is a case of the sum of the parts being greater than the whole and the addition of sound to any computer program, even a utility program, can more than double its enjoyment and effectiveness.

As well as sound effects, the Amstrad can be programmed to produce music. This opens up a totally new area for exploration, an area without prece-



dence in the world of personal computing. Armed with the ability to produce ordered sequences of notes we have a complete music system which can not only play tunes in three-part harmony but which is imbibed with the speed and decision-making attributes of a computer.

About this series

The aim of this series is to act as a springboard for further experiments and programs which, I hope, you will write and develop. The accent is on sound and music and how you can get the best from the powerful sound generating system incorporated in the Amstrad.

The programs are written in a fairly structured manner and are documented so you can understand the workings behind them. Generally, they will not have many frills, which should minimise the time required to enter them and should help cut down on mistakes. The overall appearance of a program is as important as the performance and suggestions regarding the finishing touches are made where relevant. These can be added later to suit your own taste and style. Suggestions for further experiments, alterations and developments are also made, usually in such cases where a subject has too many aspects and is too complex to tackle completely – without writing another book. It is hoped that you will explore further those areas of special interest to you.

Whether you are looking for a new laser sound for your latest arcade game, whether you want to write a new tune for your musical doorbell, whether you want to use the computer to help you learn about music, whether you want to add something to the business utility program you've written or whether you simply want to see what you can do with the sound facilities, I hope this book contains something for you and will encourage you to carry on experimenting from where I leave off.

What is Sound?

This installment looks at sound from the computer's point of view.

Amstrad BASIC is a fast and powerful language. It includes several commands to help the user program the sound generator. Even a few casual experiments with these commands will reveal how complex and difficult they can sometimes be to control. They have been well designed, however, because we do not always need to specify every single parameter; those we omit default to sensible values. This means we can learn how to use the sound generator quite painlessly, adding parameters as required.

The User Guide devotes only a few pages to the sound facilities and a lot more information is required to get the best from the system. Unfortunately, Amstrad's Concise BASIC Specification has little to add. The problem here is exactly the same as the one we faced when we started to learn BASIC. The computer has a set way of operating and in order to control it we must give it instructions in its own terms. This means we need to know something about the properties of sound and how to convert this information into a program the computer can understand.

The nature of sound

Sound is sometimes difficult to understand because we are dealing with something we can not see. A sound is produced when an object is struck or rubbed or, in scientific terms, otherwise excited. This causes the object to vibrate which in turn causes the air to vibrate. These vibrations are sensed by the ear and we perceive them as sound.

Musical instruments which produce sound by being struck include the drums, piano, gong and xylophone. Stringed instruments such as the violin produce sound by being rubbed with a bow. Brass instruments such as the trumpet and trombone are played by blowing and vibrating the lips. This excites the air inside the instrument which vibrates at a pitch proportional to the length of the brass tubing. The flute is played by blowing across the mouthpiece to excite the air column inside it. The same principle is at work when you blow across the mouth of a bottle. Instruments such as the oboe, clarinet and saxophone contain a reed which vibrates in response to vibrations from the lips.

Just as sound is caused by vibrations in the air, so the sound chip generates its sounds with electrical vibrations. Basically, it sets up a series of oscillations, the higher the pitch, the faster the oscillations. These oscillations are sent to the loudspeaker which vibrates at the same frequency and produces a sound. It is not necessary to know exactly how it does this and we'll leave it at that but the result is, perhaps obviously, a little electronic. We'll examine these vibrations a little closer.

Looking at sound waves

Sound vibrations travel in a series of waves and different sounds produce different waveforms. If we play a sound through a microphone and feed it into an oscilloscope we can see what its waveform looks like.

A sine wave is a pure tone of a single pitch or frequency which is usually only produced by a tuning fork or by electronic means. It is possible to produce many sounds by combining sine waves in the right proportions. This process is known as additive synthesis because waves are added together and it is used in some commercial synthesisers. Because of the large number of sine waves it is often necessary to add, it is a costly and time-consuming process.

The sound of the Amstrad

One form of synthesis, known as subtractive synthesis, takes a waveform and filters out certain harmonics. This method is more common than additive synthesis and is in general use in most synthesiser systems. A tone control is a simple filter and blocks out the higher frequencies as you increase its effect.

Before you can start filtering, you need something to filter. A sine wave, consisting of only one frequency, would be of little use. The best waveforms are those which contain a lot of harmonics which give you plenty of body to chip away from. Most synthesisers offer triangular, square and sawtooth waveforms. The triangular wave is very like a sine wave but contains a few harmonics, the square wave sounds a little like a clarinet and the sawtooth wave produces a sound with reed-like qualities. Try this short program:

```
10 FOR pitch=1600 to 20 STEP -10
20 SOUND 1,pitch 30 NEXT pitch
```

This plays some of the pitches the sound chip can produce, albeit in a very uneven fashion, but it serves to illustrate the waveform produced by the sound chip. Can you tell which type of waveform it is? It's not a terribly easy task because the low pitches sound like a rasp and the high pitches are 'plinky'. The middle range, however, is quite mellow and if you alter line 10 to:

```
10 FOR pitch=500 to 100 STEP -10
```

you may sense a clarinet-like quality about the tone and you'd be right in thinking that the sound generator produces a square wave. It's not quite a perfect square wave, however, and you can hear how the tone varies as the pitch changes.

Next month, we'll take a look at the individual parts of a sound, and examine how Amstrad Basic treats and uses each part.



Table 1 – Notes, Frequencies and Pitch Numbers

In the table which follows, the octave numbers used in the note names follow the User Guide's specification. The numbers in parenthesis offer an alternative octave numbering sustem.

The frequencies listed are those produced by notes in the western scale. The pitch numbers do not produce these frequencies exactly but the differences are so small as to be virtually unnoticable. For those interested, the relative errors are listed in Appendix VII of User Guide.

Middle C lies in octave 0, ie C0.

NOTE NUMBER	NOTE	FREQUENCY IN HERZ	PITCH NUMBER
OCTAVE -3 (1)			
1	C-3	32.703	3822
2	C#-3	34.64	3608
3	D-3	36.708	3405
4	D#-3	38.89	3214
5	E-3	41.203	3034
6	F-3	43.654	2863
7	F#-3	46.24	2703
8	G-3	48.999	2551
9	G#-3	51.91	2408
10	A-3	55.000	2273
11	A#-3	58.27	2145
12	B-3	61.735	2025

OCTAVE -2 (2) 13 C-2 65.406 1911 14 C#-2 69.296 1804 15 D-2 73.416 1703 16 D#-2 77.782 1607 17 E-2 82.407 1517 18 F-2 87.307 1432 19 F#-2 92.499 1351 20 G-2 97.999 1276 21 G#-2 103.826 1204 22 A-2 110.000 1136 23 A#-2 116.541 1073 24 B-2 123.471 1012

OCTAVE -1 (3) 25 C-1 130.813 956 26 C#-1 138.591 902 27 D-1 146.832 851 28 D#-1 155.564 804 29 E-1 164.814 758 30 F-1 174.614 716 31 F#-1 184.997 676 32 G-1 195.998 638 33 G#-1 207.652 602 34 A-1 220.000 568 35 A#-1 233.082 536 36 B-1 246.942 506

OCTAVE 0 (4) 37 C0 261.626 478 38 C#0 277.183 451 39 D0 293.665 426 40 D#0 311.127 402 41 E0 329.628 379 42 F0 349.228 358 43 F#0 369.994 338 44 G0 391.995 319 45 G#0 415.305 301 46 A0 440.000 284 47 A#0 466.164 268 48 B0 493.883 253

OCTAVE 1 (5) 49 C1 523.251 239 50 C#1 554.365 225 51 D1 587.330 213 52 D#1 622.254 201 53 E1 659.255 190 54 F1 698.457 179 55 F#1 739.989 169 56 G1 783.991 159 57 G#1 830.609 150 58 A1 880.000 142 59 A#1 932.328 134 60 B1 987.767 127

OCTAVE 2 (6) 61 C2 1046.502 119 62 C#2 1108.731 113 63 D2 1174.659 106 64 D#2 1244.508 100 65 E2 1318.510 95 66 F2 1396.913 89 67 F#2 1479.978 84 68 G2 1567.982 80 69 G#2 1661.219 75 70 A2 1760.000 71 71 A#2 1864.655 67 72 B2 1975.533 63

OCTAVE 3 (7) 73 C3 2093.004 60 74 C#3 2217.461 56 75 D3 2349.318 53 76 D#3 2489.016 50 77 E3 2637.021 47 78 F3 2793.826 45 79 F#3 2959.955 42 80 G3 3135.963 40 81 G#3 3322.438 38 82 A3 3520.000 36 83 A#3 3729.310 34 84 B3 3951.066 32

OCTAVE 4 (8) 85 C4 4186.009 30 86 C#4 4434.922 28 87 D4 4698.636 27 88 D#4 4978.032 25 89 E4 5274.041 24 90 F4 5587.652 22 91 F#4 5919.911 21 92 G4 6271.927 20 93 G#4 6644.875 19 94 A4 7040.000 18 95 A#4 7458.621 17 96 B4 7902.133 16


36



He was alone at the console. The ship was stranded in hyperspace and nothing he did on the keyboard seemed to free him from his current situation. It really was the last resort. Only one thing could help him now.

He reached for the phone and dialled.

"HELLO, HQ . . . HOW CAN WE HELP YOU?"

HQ is the Amstrad User Club's new service for computer owners.

Player support is only one of the many services available to HQ members. For only **£14.95**, you can join this select club at star level to really get the most out of your Amstrad support service. A membership card, twelve monthly newsletters, a seasonal catalogue, a product locating service for 1,500 stock items and a full range of peripherals, regular competitions and news items, early release of software information, discounted entry to computer shows and and so much more.

JOIN THE MOST ADVENTUROUS COMPUTER GAME CLUB IN THE WORLD

£27.95 makes you an Elite Level Member, which additionally entitles you to twelve issues of the Official Amstrad User Magazine.

When you join, HQ Membership gives you:

- Complete Player Support
- Sneak previews of new game releases
- 24-hour sales lines
- A selection of over 1,500 products in stock
- Product locating service
- Exclusive membership card
- 12-monthly newsletters
- Seasonal catalogues of products all at unbeatable prices
- Technical hot-line support and advice
- Monthly competitions and news items
- Priority despatch on all new software releases (Beat your friends)
- Discounts to computer shows
- Goods in stock despatched within 24-hours

Additionally for Elite Members:

- Monthly Official Amstrad Magazines

AMSTRAD User Club

AMSTRAD USER CLUB P.O. Box 10, P.R.E. Complex, Pallion Industrial Estate, Sunderland SR4 6SN. Tel: 091 510 8787 Fax: 091 510 0155

Please complete and return this coupon for further details and your free Amstrad User Club Newsletter.

Alternatively, telephone our Membership Hotline on **091 510 8787**.

NAME: ______________________________

ADDRESS: ______________________________

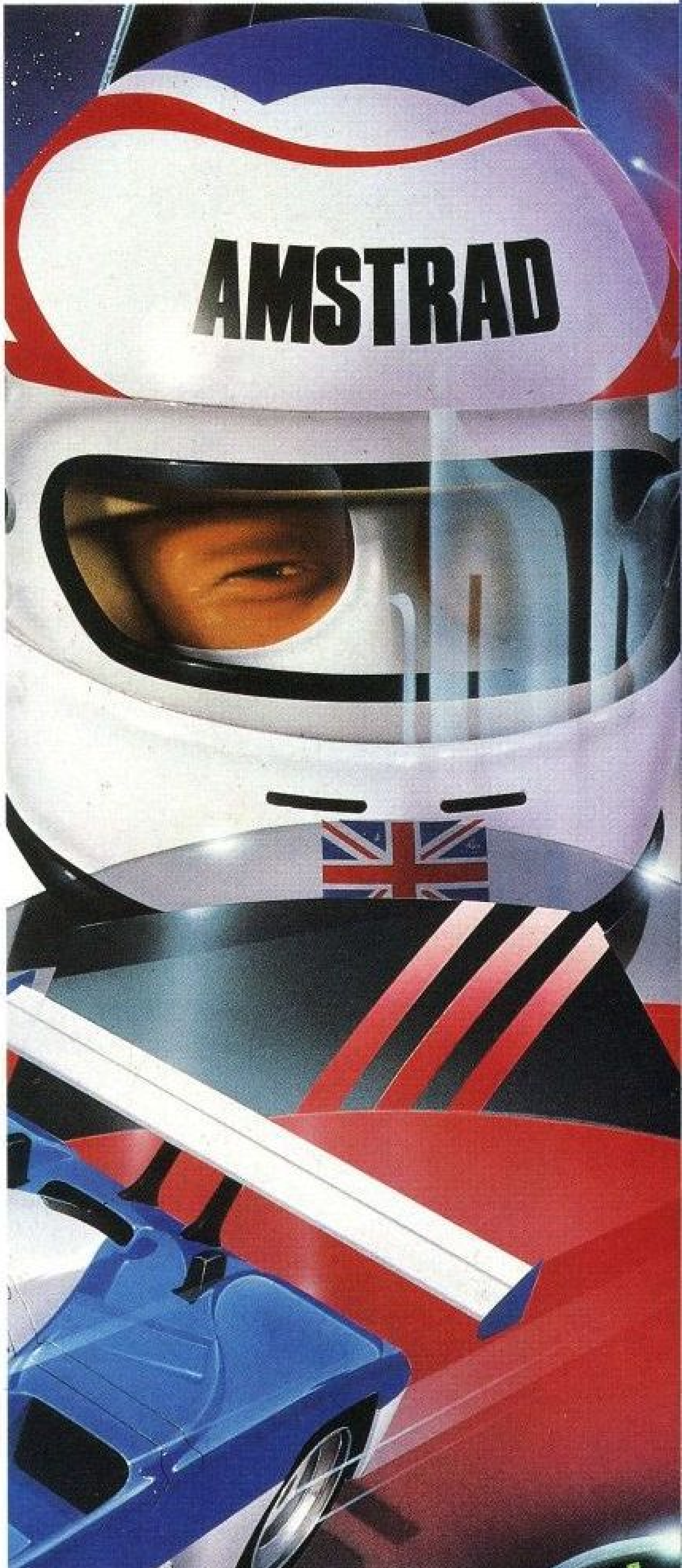
____

____

TELEPHONE: ______________________________

RETURN TO: THE AMSTRAD USER CLUB, FREEPOST, SUNDERLAND SR1 1BR

KG/ADJ/11



AMSTRAD USER CLUB
It pays to belong!

DIRECT LINES

Box Clever With The ROMBO ROM Box

Expand your CPC with this compact 8 socket ROM box. Keep up to 8 programs instantly accessible, CPC6128 Users can double up for an instant library of 16 programs!
With ROM based software you can eliminate all of the hazards of using tapes and discs; no loading time is required, no danger of corruption and the optimal memory space is left free. ROMBO has a standard through connector so it will not restirct the use of other peripherals with your CPC, and it will accept 200ns or 250ns EPROMS.
Normally £34.95, ACU Price £30.95. MEMBERS £29.95.
Order Code ROMB0003.

Dynamic Disc!

Bored with all that waiting while the tape drive loads? Move your CPC up a gear with this Amstrad disc drives.

DDI-1 Disc Drive

Not only will you be loading your programmes in seconds rather than minutes but you will have access to a whole new range of software. The DDI-1 comes complete with CP/M 2.2 and DR Logo enabling you and your machine to tackle those really serious jobs. Normal price £159.95. Special ACU price £139.95. MEMBERS £129.95. Order Code: FDDI-1.

Great Value, Great Printer!

Brand new on the market from Citizen comes the stunning 124D 24 pin dot matrix printer. It promises and delivers great value for money and is aimed particularly at the home, educational and small business user markets.
Whether you are looking to upgrade from your 9 pin or are a first time buyer who needs real quality output, this is the machine for you. Avaialble to readers at a great value price of £294.00 and to User Group Members at only £272.72. Order Code: FC124D.

Money Manager

Money Manager is an easy-to-use system for recording all financial transactions, and for analysing them in a number of very powerful ways in order to facilitate sound finanical management. It is ideal for controlling the finances of a small business, or for users wishing to control their personal finances in a business-like way. Use it to check bank statements, keep track of expenditure, monitor cash flow, make budgeting forecasts, prepare business financial statements, pacify your bank manager, convince the tax and VAT inspectors, etc! Readers price £25.95, Members £24.95. Order Code: FASP002.

DIRECT LINES ▶ EXCLUSIVITY ▶ DIRECT LINES ▶ SERVICE ▶

▶ QUALITY ▶ DIRECT LINES ▶ VALUE ▶ DIRECT LINES ▶ DIRE

Words To The Wise

Once you are passed the novely stage and begin to consider your computer as more than simply an ingenious toy, the first stop down the road to serious applications is usually a word processing package.

At first sight, and to the uninitiated, word processing software seems to turn your machine into no more than a clever typewriter with a memory.

But as you will discover, WP is much, much more than that.

Tasword — Tape Version
Normal price £24.95. Special ACU price £21.45. MEMBERS £20.95. Order Code: FTASW0001.

Tasword 464 — Disc Version
Normal price £29.95. Special ACU price £25.55. MEMBERS £24.95. Order Code: FTASW0002.

Tasword 6128 — Disc Version
Normal price £29.95. Special ACU price £25.55. MEMBERS £24.95. Order Code: FTASW0001.

Tas-Spell — Disc Version
Normal price £19.95. Special ACU price £17.55. MEMBERS £16.95. Order Code: FTASS0001.

Protext — Tape Version
Normal price £19.95. Special ACU price £16.55. MEMBERS £15.95. Order Code: FTEXT001.

Protext — Disc Version
Normal price £26.95. Special ACU price £22.55. MEMBERS £21.95. Order Code: FTEXT0001.

Protext — ROM Version
Normal price £39.95. Special ACU price £30.55. MEMBERS £29.95. Order Code: FTEXT0002.

JOIN THE AMSTRAD USER CLUB

The specialist support company for Amstrad Computer Users. We are the largest organisation of our kind with membership currently standing at 30,000 and open to anyone resident in the U.K.

Enjoy the benefits:

- on-line technical support
- 24 hour sales line for discounted hardware and software
- priority subscription to the Official Amstrad Magazine
- monthly news letter and price lists including the latest release
- special members only offers
- all for only £27.95 inc VAT – what are you waiting for?

Power to your CPC

MULTIFACE TWO+

Tape to disk at the touch of a button! Multiface is complertely foolproof – stopping any program in its tracks and saving from memory to disk or tape. Not only this, but makes Romantic Robot have gone one step further and incorporated a memory editor. No program is safe... everything is out in the open including the Z80 registers, CRTC data and any part of the memory. **WARNING! YOU MUST NOT USE THIS PRODUCT TO COPY, REPRODUCE OR INFRINGE IN ANY WAY COPYRIGHT MATERIAL WITHOUT THE CLEAR PERMISSION OF THE OWNER. ACU CONDEMS THIS PRACTICE AND IT IS ILLEGAL.** Just about the cleverest device about!! Normal Price £47.95; ACU Price £42.75; members £40.75. Order Code FMULTIFACE2.

Priority Order Form

Membership Number (where applicable) ....

Name: Mr/Mrs/Miss Initials .... Surname ....

Company Name (where applicable) ....

Address ....

....

.... Postcode ....

Daytime phone number ....

Computer model number ....

Please send Cheque/Eurocheque/Postal Order made payable to: **Amstrad User Club**

Access/Mastercard/Eurocard/Barclaycard/Visa

□□□□/□□□□/□□□□/□□□□ Expiry Date: ___ / ___

Signature of card holder ....

Code	Description	Qty	Unit Cost	Total

Total ....

Send to: **Amstrad User Club, PO Box 10, PRE Complex, Pallion Industrial Estate, Sunderland, SR4 6SN.**

Offer closes: 31st October, 1990.

Prices include VAT and delivery within the U.K. mainland.

Overseas despatch on application.

Please allow up to 28 days for delivery.

A11

☎ ORDER HOTLINE 091 510 8787 (23 Lines)

24 Hour Orderline

Faxline
091 510 0155

EMAIL/Telecom Gold
MAG 90320(72)

AMSTRAD USER CLUB

It pays to belong!


MONTY PYTHON'S FLYING CIRCUS
THE COMPUTER GAME
IT'S A GOOD GAME
NO IT'S NOT
YES IT IS!
"What we have here is a BRILLIANTLY ORIGINAL and witty interpretation of the Python Theme". Zero 89%
"One of the tastiest slices of alternative arcade action since Venezuelan Beaver Cheese". The One 85%
ATARI ST
AMIGA
SPECTRUM
COMMODORE 64
IBM PC
AMSTRAD
Virgin GAMES



KICK OFF

The award winning, chart topping and international best selling soccer simulation of all time!

- Best Arcade game 16 bit '89
- Europes best soccer simulation '90
- Elspa game of the year
- 16 bit game of the year!

Emap golden joystick awards

Featuring:- Pixel Perfect passing
Blistering Pace
Superb tacticle play

"Has to be the best football simulation yet" ST USER

"Most playable soccer simulation in binary history" C & VG 88%

"Boots the other football simulations over the cross-bar" Zzap 96%

"Simply the best football sim" New Computer Express

GARY LINEKER'S HOT SHOT

Play in a full scale eleven-a-side football game complete with sliding tackles, throw-ins, corners, goal kicks, fouls and even the dreaded referee with his red card.
Will you have what it takes to match the shooting skills of England's Gary Lineker's Hot Shot.

International Soccer replaces Gary Lineker's Hot Shot on Atari ST and Amiga.

Pack includes:

- ***3 Superb Award Winning Games***
- ***Unique Full Colour Wall Chart With the History of the World Cup including Amazing Facts & Figures***
- ***Comprehensive User Guide***
- ***Strategy, Management and Red Hot Action makes this the Ultimate Soccer Experience***

TRACKSUIT MANAGER

A management game the way it should be played. Live the match thrills, as you compete to qualify for the Nations and World Cups.

You decide the play and enjoy the victories and suffer the defeats...

- Play defense, attacking or man to man marking
- Offside trap, sweeper system or possession football
- Genuine goal-kicks, corners and throw-ins
- Crunching tackles, fouls, penalties, bookings and sendings off
- 54 computer managed squads from around the world all with individual tactics

"The best ever football managerial game ever, in the history of the World" C & VG 9/10

The ultimate management game" Ace Rated 929

"Easily the best of its type" Zzap 64 89%

"The best ever managerial game" Sinclair User Classic 93%







AVAILABLE FOR

ATARI ST AMIGA C64 (CASSETTE + DISK)
AMSTRAD CPC (CASSETTE + DISK)
SPECTRUM (CASSETTE + DISK)

EMPIRE

4 The Stannetts, Laindon North Trade Centre, Basildon, Essex, SS15 6DJ Tel. No. (0268) 541126